1: Gifford E-4,5 (1920-1921) 1929 OU9 Tonga OU9

Lime made from coral was habitually used to cleanse the scalp and hair and to stiffen the hair so it would more readily remain erect.

GENEALOGIES

In Tonga the genealogies of the great chiefs seem not to have been kept by the priests. These great genealogies were in the custody of the elderly woman of chiefly rank who memorized them and taught them to the young chiefs. With the adoption of writing, this custom of learning genealogies by heart has fallen into disuse. It is said that the women who were the repositories of the genealogies often discussed them among themselves and thus refreshed one another's memories. The genealogy which was supplied to me by the Queen of Tonga was set down from memory by the Tamaha Amelia with the aid of the chief named Shadrach Mumui. As soon as these two learned to write they decided to record the genealogies of the great chiefs and this record which was begun more than 75 years ago has been continued down to date.

From a practical standpoint, the Tongans no doubt exhibited as much interest in genealogical information as did the other Polynesians, but from a theoretical and mythological standpoint they seen not to have evolved any great genealogical fictions, such as characterized the Hawaiians and other eastern Polynesians. In Tongan the ancestor is called *tefito* (literally, root, origin). King George I, in speaking of the present Prince Consort Tungi on the occasion of his birth, remarked, "This child is a tangled myrtle (*maile fihi*)," meaning that he combined many lines of descent, notably from the Tui Tonga on his mother's side, and from the Tui Kanokupolu on his fathers.

PERSONAL NAMES

Hundreds of Tongan personal names were recorded. The meanings of a number of these have been worked out by Miss Beatrice Shirley Baker and are published below. No doubt many of these personal names are nicknames, others are true names given in infancy, and a few are titles. As a rule, the same name is applied indiscriminately to males and females. The Tongans seem to give individual names, not only to persons and places, but also to animals and ships. Their application of names to ships seems to be very similar to the European. McKern (43) publishes a list of ancient ship names.

Dogs kept as pets were named, though I have no examples to offer. The great mythical dog of Moturiki, Fiji, which killed Maui, was named Fulupuputa, which means "stout hair." An ancient tortoise, which is the property of Queen Charlotte, is known by the name of Tui Malila. (Malila is a place in Lapaha, Tongatabu. It is said that the Tui Tonga was anciently

1: Gifford E-4,5 (1920-1921) 1929 OU9 Tonga OU9

There seem to be two mutually exclusive ideas as to the nature of ghosts and doubles. One idea is that they are emanations from, or constituent parts of, mortal man, like the various spiritual parts of man conceived by the ancient Egyptians. The other conception is that they are spirits or devils which by passing through the body in a grave or through a living person assume the likeness of the person. This conception makes both the ghost and the living apparition appearances taken on by evil spirits embodied in human form, rather than emanations from, or constituent parts of, the human body. It seems likely that spirits thus appearing in the form of some known person should be classified with Mariner's *otua paun* (41, vol. 2, p. 104), although no modern informant so classified them. One informant said that it was a spirit from Pulotu that might thus take on human form by passing through a grave. It is said that when a person sees a ghost he shakes all over and his hair stands on end, but no sickness follows. Ghosts are declared not to partake of food, and food offerings were said not to have been made at graves. This is perhaps to be accounted for by the belief that Pulotu is a land well supplied with the necessities of life.

At the death of a person it is believed that the ghost of a dead relative may come to take the deceased. If a ghost is seen when a chief is ill, it is thought to be a relative come to give medicine. People fear ghosts because they may take life.

A ghostly experience of the influenza epidemic in 1918 was related. Fusipunga of Lifuka, a man who worked in the government labor gang and who had withdrawn from the Free Church to join the Mormon Church, is said after death to have haunted his wife and his friend Albert of the Free Church. His ghost prevented his wife and friend from sleeping, coming at night and shaking them. It was thought that Fusipunga had done wrong and hence could not rest in peace. There were those who said that his great sin was quitting the Free Church and joining the Mormons, also subleasing his land to Mormons for the erection of their church.

To lay a troublesome ghost the grave is opened and the bones broken or moved. This is done especially when it is believed that the appearance of the ghost is responsible for other deaths in the family. No special term was mentioned for this act, only the term *liliu* (to change, to move) being used.

In connection with the excavation of skeletal material on the island of Kao, Haapai, by McKern and me, ghosts manifested themselves. Natives who encamped near the burial place, which was the floor of a great bubble of lava, said that they heard "a man and a woman" crying at the spot the night following the removal of the bones. A Lifuka informant had heard similar wailing following the removal of bones from a cemetery, but attributed it to the "blood" of the buried person rather than to a ghost. This belief about sentient and rational "blood" was said by another informant to be a modern innovation.

2: Mariner F-5 (1806-1810) 1818
OU9 Tonga OU9

down all that he had seen and heard as his memory might spontaneously furnish it, in order that these materials might afterwards be made, from time to time, subjects of conversation, strict scrutiny, amplification, arrangement and composition. Not one of the ensuing pages has therefore been written without Mr. Mariner's presence, that he might be consulted in regard to every little circumstance or observation that could in the smallest degree affect the truth of the subject under consideration: and, in this way, it is presumed that a great deal more useful and interesting matter has been elicited than would probably have occurred to him through the medium of his own unassisted reflections; for conversation calls to mind many things that would otherwise have escaped the memory, it constantly demands elucidations; one idea gives birth to another, until the whole subject lies completely unfolded to the mind.

With regard to arrangement: in the first place is related an account of the voyage of the Port au Prince, it being

2: Mariner F-5 (1806-1810) 1818
OU9 Tonga OU9

esteemed sufficiently interesting, as it involves a combination of untoward circumstances that led ultimately to the destruction of the ship: the whole of this has been faithfully composed from a journal kept by Mr. Mariner on board. Next follows a narrative, or rather, as it may be termed, a historical account, of all the important and interesting events that occurred during his stay at the Tonga Islands; not merely as they regarded himself, but with an aspect to the different changes, religious and political, since they affected, in a most important manner, the situation of public affairs: and that this portion of the work may be better understood, a comparison is drawn between the state of these islands upon Mr. Mariner's arrival, and that in which Captain Cook had previously found them; in doing which the revolution of Tonga *, and other important and highly interesting events which had taken place in the mean while, are given according to the account of the

* From the "Transactions of the Missionary Society," it appears that this event took place in May, 1799.

6: Collocott M-5 (no date) 1928 OU9 Tonga OU9

aries Maristes (29), Hazlewood (24), Pratt (32), and, to a less extent, to other dictionaries of Polynesian languages.

In my possession is a book (7), in which are pencilled notes giving some of the native names of plants, I think, by Mr. Crosby. I thank Mr. Crosby for this kindness to one who is a stranger to him. Yet comparatively few of the plants are thus distinguished, and it is to be hoped that recent botanical work in Tonga will fill in the large gaps. To Mr. E. W. Gifford I owe Graffe's very useful list of the birds of Tonga, with native, scientific, and many popular names. To him also am I indebted for some of the poems in this collection, and, jointly with Her Majesty Queen Salote Tupou, for a copy of the "Royal and Chiefs' Genealogies." The published papers of the late Rev. Dr. J. E. Moulton, and his unpublished papers (31) have provided much material. I would also thank my colleague, the Rev. R. C. G. Page, for frequent assistance. For the use of Tukuaho's Diary, I am indebted to his son, His Royal Higness Prince Tungi.

For the tunes I am indebted to my old pupil Mr. Manoa Havea, to my wife, and to Mr. S. Jackling, of Albury, New South Wales. Some airs were written down for me by Mr. Havea, and others were sung by my wife from memory and written by Mr. Jackling. My wife's idiomatic and facile use of the Tongan language, her ability to place herself in relations of easy familiarity with the people, and her keen interest in all that concerned them have made me her constant debtor. To Tongan friends my obligations are endless, and full acknowledgment is not possible; but in especial would I thank His Royal Highness Tungi, the late Hon. Tupoutoa, Miss Alice Ahio, many of my old pupils, both boys and girls, at the Tupou College, Nukualofa, and boys of the newer section of the Tupou College at Nafualu, in especial Manoa Havea, J. Havili, and F. Penitani.

But most of all do I owe to my friend and colleague at the Tupou College, the Rev. John Havea. Tongan poetry, condensed, pregnant, is full of allusions which require an intimate knowledge of the circumstances referred to for their understanding. This applies to the compositions of contemporaries. Much of the language and many of the allusions of the poetry of an earlier, even comparatively recent, time are unintelligible to most living Tongans. Without Mr. Havea's help this work would have been impossible. What there is of fair interpretation of Tongan ways of thought in it is owing to him, and I count myself fortunate to have had many years of close association and intimate friendship with a man so intelligently interested in the past and bravely hopeful for the future of his people. I would have this paper be a memorial of our many conversations, often extending far into the night, either in his room or in mine, at Nafualu.

6: Collocott M-5 (no date) 1928 OU9 Tonga OU9

the one in which I lived. A choir of men entertained the chief at nights, singing, among other things, the compositions dealing with the rhinoceros beetle. My wish to hear these pieces becoming known to him, he courteously sent the choir to sing them to me, and I had the words written down.

Love poems are called *hiva kakala*, songs of sweet-smelling flowers, of which some modern specimens are given (p. 125). A collection of modern poems, including pieces for dances, might be enlarged indefinitely. What are presented are fairly typical. Direct references to passion are remarkably rare, except in present-day compositions. Instead, the poet speaks of pleasing sights and sounds and fragrances, and the imagination must supply the circumstance that the lover would fain walk with his mistress in these pleasant places, frequent festivals with her, give to her, or receive at her hands, sweet-smelling garlands and flowers.

There are other poems in which wooing is represented under the image of hunting the pigeon. Other images, for example fishing, may be so employed. This reserve is characteristic of the Tongans, who are a proud and self-controlled people.

Mariner speaks of the frequency with which Samoan songs are used as accompaniments to dances. Perhaps he overstates this; but Samoan verses, not understood and often corrupted, are frequently sung. There is also a marked tendency to embellish compositions with foreign words and phrases, Samoan, Fijian, and, today, English. Sometimes these loan words are intelligible to the Tongans; but, whether understood or not, they evidently please by their sound. The language of poetry is remarkably terse and pregnant. Almost invariably each line is complete in itself. I have translated line for line. It has been difficult to avoid making the English of these pithy verses bald and harsh. Anyone desiring a good idiomatic knowledge of the language could scarcely do better than study the poetry. The language is terse, forceful, idiomatic, and such as is used in ordinary conversation. It does not always conform to the organizations attempted in printed grammars. The way in which the Tongan speaks is not always quite that in which his European grammarians thinks he must have intended to speak.

MAMAEAEPOTO AND FALEPALANGI

Two famous bards lived in the first half of the nineteenth century. Many of their poems are composed in rivalry with one another. Mamaeaepoto belonged to Vavau, though it is clear he came to spend a good deal of time with the chiefs of Tongatabu. Falepapalangi belonged to the western (*hihifo*) district of Tongatabu. Both were deformed; Mamaeaepoto had misshapen hands, and Falepapalangi had deformed feet.

6: Collocott M-5 (no date) 1928 OU9 Tonga OU9

7. The good will of her husband's sisters is of importance to a woman: for example, one of the causes assigned for difficult labor is the ill will of the husband's sisters.

8. The literal translation of *taahine* is girl, maiden. This is a respectful term, used of chiefly women, irrespective of marriage or age. In the same way *tama, tamaiti* (lad, boy) is applied to men who are chiefs.

9. This line is difficult. It is perhaps a proper name applied to the sleeping wife. Utukaunaga is evidently a place name and translated it indicates the place where the man lies, and where his body, anointed with sweet oil, has been so foully used.

10. The expression *ia te'e tama*, was thus written by the writer, who took the story down. *Te'e* in this position is unknown to me; possibly it is *te*, the rare article. It is provisionally translated "my."

11. Onemalama is the compound or area within which the compound of Lolomatokelau was situated. Haatafu, a wider name, is the village or area embracing Onemalama and other places. This is a very common feature of present-day nomenclature but possibly it was not so common earlier. This story does not appear to be recent and it is possible "in Haatafu" is added by the modern narrator to assist identification. It is said that the gathering of Tongans into comparatively large villages is a recent innovation, originating perhaps in war, and encouraged by the needs of present-day education and religion.

Pages 23-25. Sinilau and Hina, daughter of Puko

1. The expression "branching ivory" (*lei-mangamanga*) seems to be quite unknown to present-day Tongans, but probably indicates the female pudenda. "*Lei mangamanga* is probably connected with the *rei* of Atu" (13, no. 3). Best (3) writes of "the curious stone artifact of Atiu fashioned to resemble and represent the female organ."

Pages 25-26. Hina, Sinilau, and the jealous demon wife

1. The idiom for a pregnant woman's longing for a special food is rather striking. She is said to be pregnant, or to have conceived, to the food. In this instance: Hina *ohu tuituia hi he atu.*

2. *Ko Vaihi e*, literally, "That is Hawaii" (17, No. 358).

3. Fatailangalanga, climbing fatai (*Cassytha filiformis* ?). *Fuhifamalama*, cluster of gleaming hala.

4. Kapala is perhaps the island of Kambara, Fiji; but several places, not islands, are also called Kapala (21).

Pages 34-37. Hina and Nukuokakala

1. Doubtless the dialect of Niua Foou, as spoken today, has been modified by the language of the main part of Tonga.

2. The steep rocky shores of Niua Foou afford little accommodation for boats. The natives support themselves in swimming with a long, light pole under the arm.

3. Firing a gun, the modern narrator's version of what was presumably the beating the drum.

4. *Mali*, that is, English "marry" (or French, *mari*), both used as noun, of either husband or wife, and as a verb.

Pages 39-41. Kulakehahau and Tongamauluau

1. The heroine's name is spelled "Tonga-maulu'au," and "Tonga-mauluau." The hero's name is spelled both "Kulakehahau" and "Kulakihahau."

2. The probable translation of Keuiafanafana is "Overcome by a whisper."

3. The respectful word for speech, *folofolo*, is used properly enough by the maiden to her lover; *taataa*, an equally respectful term for blood seems less proper when used by the girl of herself. No one, not even the greatest chief, uses respectful terms of himself. Probably the exigencies of rhyme have forced the word upon the narrator.

4. In my copy of text, *kamoria* stands *kanosia*, a word which I do not know. I conjecture that *kamosia*, meaning signed to, beckoned, persuaded, is correct.

5. This is either the name of the man's compound, or simply a common noun meaning gathering place of companions.

7: McKern A-4,5 (1920-1921) 1929 0U9 Tonga 0U9

172 175 764 [114] tabu, although they mistook these structures for variations of the *faitoka* which they had seen elsewhere. Both describe the *faletolia* as intact and apparently kept in good condition on the langi tops, and speak of wooden images or representations of men which were seen on one of the langis. D'Urville (5, vol. 4, pp. 279-280) also mentions something of the kind. Cook describes the images in the following words:

> One of the houses, situated over a grave mound on a langi, contrary to what we had seen before, was open on one side; and within it were two rude, wooden busts of men; one near the entrance, and the other farther in. On enquiring of the natives, who had followed us to the ground, but durst not enter here, what these images were intended for? they made us as sensible as we could wish, that they were merely memorials of some chiefs who had been buried there, and not the representations of any deity. Such monuments, it should seem, are seldom raised; for these had, probably, been erected several years ago. We were told that the dead had been buried in each of these houses; . . .

If the example mentioned by Cook is not unique, this practice of erecting wooden or other effigies over the langi or *faitoka* was at least a most unusual one.

172 764 [129] To ascertain to what degree, if any, the langis are oriented with reference to any recognized standard, the trends of the walls of thirty rectangular langis were recorded. According to compass measurements, the direction of the northwest walls and that of the approximately parallel southeast walls vary from N. 9° E. to N. 40° E. One wall of Otalafava trends N. 74° E. The trend of the northeast and the southwest is likewise highly variable—N. 50° W. to N. 82° W. Thus the variability exceeds 30° out of a possible 45°. Furthermore, little attention seems to have been given to corners; in the 30 langis measured, the corner angle varies from 82° to 99°. These figures make it obvious that the alignment of the langis is out of accord with any standard system of orientation.

There is no possibility of doubt as to the origin and purpose of *faitoka* and langis. They are the burial places of Tongan chieftains who governed the ancestors of the present native inhabitants from a remote prehistoric period into historic times. Some of the *faitoka* are still in use. The workmanship envolved is not such as to suggest any foreign or lost art, but rather, logically conforms to the primitive methods and tools which the Tongans are known to have had, and generally harmonizes with the state of primitive Tongan culture.

STRUCTURAL TYPES

172 764 128 To simplify presentation, it seems advisable to treat the various langis as constituting six distinct structural types (fig. 17). Although there are many

7: McKern A-4,5 (1920-1921) 1929 0U9 Tonga 0U9

172 764 6. Fangavahe, a cave under the hill Hufangalupe, near Vaini, island of Tongatabu, is reported to contain human bones.

7. Large cave in the shore cliff just west of Hoouma, island of Eua.

172 764 173 According to one story, the human bones found in the cave near Hoouma are the remains of a party of war refugees who had been discovered in their hiding place. Their enemies built a fire before the cave mouth and those within all died from suffocation. This story is told of various caves scattered all over the Tongan group. It seems to be a favorite means of accounting for the presence of bones in caves. A more reliable informant stated that the cave was a burial place and that the bodies had originally been placed in rows. The presence of an apparently artificial stratum of white sand on the cave floor, under the bones, suggests burial.

LAPAHA, THE KING'S VILLAGE

172 361 The village of Mua, situated on the shore of a lagoon, about 5½ miles southeast of Nukualofa, was for many generations the seat of Tongan government. As such, it was the center of Tongan life and culture, and remains the richest spot in archaeological monuments in the entire archipelago.

172 124 Information regarding the ancient plan of the town was obtained from old men and women who have long resided there, some of them the direct descendants of individuals whose official business it was to keep track of just such information. The ranking direct descendant of the last Tui Tonga was 172 one of the chief informants. Another source of information is the consider- (127) able mass of mythological material assembled by Gifford (13). Personal (126) observations produced the measurements and descriptions of the existing remains of ancient structures.

172 175 361 (643) Mua is divided into two districts (fig. 46). The northern half including the area known as Maolunga is the ancient Lapaha, the southern half is the comparatively recent addition called Tatakamotonga. Lapaha was divided between the Tui Tonga, the ruling dynasty for many generations, and the Tui Haatakalaua, a chiefly family closely related to the Tui Tonga, who dominated the political life of Tonga for a period preceding the rise of the Tui Kanokupolu, the present dynasty.

Cook (4, vol. 1, pp. 282-283) contributes the following interesting description of Lapaha:

(342) (361) The place we went to was a village, most delightfully situated on the bank of the inlet, where all, or most of the principal persons of the island reside; each having his house in the midst of a small plantation, with lesser houses, and offices for servants. These plantations are neatly fenced round; and, for the most part, have only one entrance. This is by a door, fastened, on the inside, by a prop of wood; so that a person (363) has to knock before he can get admittance. Public roads, and narrow lanes, lie between each plantation; so that no one trespasseth upon another. Great part of some of these (351) inclosures is laid out in grass-plots, and planted with such things as seem more for ornament than use. . . . There are some large houses near the public roads, with spacious smooth grass-plots before them, and inclosed. These, I was told, belonged to the king; and, probably, they are the places where their public assemblies are held.

11: Sullivan D-4 (no date) 1922 OU9 Tonga OU9

The results summarized in Tables II and III show that the Tongans are among the tallest groups of mankind. The men average 173 centimeters or about 5 feet 8 inches in height. On the average the women are 10 centimeters, or 4 inches, shorter. The head is both long and broad yielding an average index of 81.1 for the men and 81.6 for the women. There is no assurance, however, that these are the natural diameters of the Tongan head. In the skeletal material brought back by Gifford and McKern, seven crania were in a fair state of preservation. With the single exception of one cranium of a young child all of these crania showed a moderate to a pronounced degree of occipital flattening accompanied by marked asymmetry, pointing clearly to the fact that they had been artificially deformed. The cranial length-breadth indices were 82.7, 84.5, 86.0, 86.0, 88.2, and 93.7. These average 86.8.

At my request inquiries were made by Gifford and McKern as to the prevalence and methods of head deformation. The information shows that the Tongans in the past and to some extent at the present time shape the heads of children, but the description of the methods employed throws no light on the deformation seen in the crania. According to several informants the child was laid on a piece of tapa with the top of its head placed against a heavy block of squared wood, the pressure tending to flatten the top of the cranium. The deformation described above is decidedly not of this type. Since this procedure is said to have been continued for one month only, its effect may be considered as negligible. It is difficult to understand how it would have any appreciable effect even if continued indefinitely, since the amount of pressure involved must have been very slight.

In the Tongan skeletal material that I examined, the tops of the crania show no evidences of flattening. The deformation on these Tongan crania is very similar to that observed in the crania of many groups of Indians in the southwestern United States. Occipital flattening is usually thought to be accidental—at least in origin. When the effect of it was once recognized, conscious effort may have been made in certain groups to duplicate by artificial means the results obtained by accident. The hard beds and wooden pillows that are still in use among the Tongans suggest a possible explanation of the occipital flattening, as it is known that a certain amount of deformation or flattening is easily brought about by hard pillows, particularly in persons who are naturally short headed. Examples of such accidental flattening of the occiput are numerous among the Chinese, Japanese, and Koreans. The only difficulty involved in this explanation is to account for the difference between the degree of deformation found in the living series and that in the cranial series. It is known that the crania are not modern. The average length-breadth index of these crania is nearly 6 points higher than the same index in the living. On the whole, while the implication is that deformation is not so prevalent at present as in the past, it seems better to base no generalization on the

15: Thomson G-3 (1886-1900) 1902
OU9 Tonga OU9

with time on his hands and a patient determination to record the native music faithfully, at any sacrifice of time and temper, was an opportunity not to be neglected. Soon after our arrival, therefore, we paid a visit to Mua, where the old music is most cultivated, and invited the people to entertain us with the *Lakalaka*, for we had naval officers with us, and the *Otuhaka* is strong meat for the uninitiated. At the close of the performance I sent for the leader, Finease (which is Phineas), and unfolded my proposal, which was that, for value to be received, he and a select band of musicians of the old school should come to Nukualofa and sing without ceasing until they had yielded up their treasures to the paper. Plainly they thought it a fatuous proceeding, but they consented lightly, not knowing what lay before them.

Three mornings later we were at work in the huge wooden shed which serves Dr. Maclennan as operating-room and hospital. At the further end lay two patients who had undergone serious operations on the previous afternoon; what they thought of our proceedings I do not know, but I could make a shrewd guess from the expression of the old ladies who were nursing them. Amherst Webber sat at a deal table littered with music-paper, with Phineas and three middle-aged ladies, all noted singers, sitting in a row on the floor before him. He wore a harassed air, for it soon transpired that the ladies, thinking that they knew better than he did what he wanted, were bent on running through their *répertoire* without *encore*. When I explained that they would have to sing each phrase, not twice, but perhaps forty times over, they were at first amused and afterwards distinctly bored. Webber found it impossible to take

15: Thomson G-3 (1886-1900) 1902
OU9 Tonga OU9

126 533 the music down phrase by phrase, because they were incapable of picking up the melody where they had left it; the only way was to make them begin each time at the beginning, and carry the score a few notes further with every repetition. Moreover, it was discovered that Phineas seldom sang the same phrase in exactly the same notes, for the melody is overlaid with innumerable turns and ornaments at the will of the singer, and these 126 are impossible to represent in our notation. Two hours at a time being as much as writer or singer could stand with safety, the work took several days, but, thanks to the good sense of Phineas and the patience of Webber, a valuable collection was ultimately made. For the notes I am, of course, indebted to Amherst Webber.

I. THE "ME'E-TU'U-BAKI."

535 534 A good drawing of this dance is to be found in *Cook's Voyages*, and, as Mariner also has described it, I need say no more than that it is performed by men, drawn up in one line or two, who perform certain slow and stately evolutions, accompanying the music by twirling a light wooden instrument carved in the shape [533] of a paddle. The rhythm is set by three large wooden drums, and a number of men sitting round them sing the words, which consist generally of a single phrase, 533 endlessly reiterated. Unlike the *Otuhaka*, the *Me'e-tu'u-baki* is not contrapuntal, and, though a number of voices maintain one note while the others sing the melody, it may be said to be sung in unison. To the European ear, despite its marked character, it is indescribably monotonous, for the words have no meaning, and the phrase is repeated for twenty minutes at a

26: Buck D,E-4 (no date) 1935 OU9 Tonga OU9
Samoa OU8

the round lace-caps worn at one time by old ladies of European stock. If the missionaries' wives wore such caps,* the model for the head-gear of the goddess is found. Someone in central Polynesia, possessed of some Tongan material and a sense of humour, simply tacked a piece of the Tongan circular textile on to the head of a rejected Aitutaki image. The neck- and waist-additions followed as a matter of course, and so a puzzling composite object was produced.

ACKNOWLEDGMENTS.

This paper forms an introduction to the study of the numerous inanimate representatives of the Polynesian gods which escaped destruction and found refuge in various museums. Of these sanctuaries, the British Museum houses an enviable number. I have to thank Captain T. A. Joyce and his staff in the Ethnographical Department of the British Museum for facilitating in every possible way my examination of the rich material in that wonderful but woefully overcrowded institution. My thanks are also due to Captain A. W. F. Fuller and Mr. Oldman for access to their private collections and for drawing my attention to the Tongan images. The line drawings in this paper were prepared from photographs taken with a Leica camera by myself and thrown on to the drawing paper with a Leica enlarger. The enlarging apparatus and the employment of Mr. R. W. Foster of Yale University to make the drawings are due to the courtesy of the American Research Council in awarding me a Grant-in-Aid for the study of the material culture of central Polynesia.

CONCLUSIONS.

Wooden images, though not common in western Polynesia, were made at Haapai in the Tongan group and the solitary specimen from Samoa was probably due to Tongan

*In the early years of the eighteen hundreds, say the 'twenties and 'thirties, the caps worn covered the head, and the sides were continued in broad bands more or less long coming from behind the ears over the shoulders and down the breasts. See portraits of missionaries' wives in W. Morley, *History of Methodism in New Zealand;* Mrs. W. White, p. 43; Mrs. N. Turner, p. 43; Mrs. J. Hobbs, p. 52; Mrs. C. Creed, p. 75; Mrs. T. Buddle, p. 76. In the 'seventies and 'eighties some caps at any rate were quite small things sitting on the top of the head only, and with no pendent ornaments.—Ed.

32: Staveley & Douglas D-4 (no date) 1959
OU9 Tonga OU9

BLOOD GROUPS IN TONGANS, (POLYNESIA)[1]

By J. M. STAVELEY and R. DOUGLAS

125 RESULTS OF TESTING 200 Tongans for various blood groups and abnormal haemoglobins are the subject of this report. A blood group study of this population has been reported by Kooptzoff and Walsh.[2] These workers tested 102 subjects for the A_1A_2BO, MNS and Rh systems. We have extended the blood group systems tested to include P, Lewis, Kell, Duffy, Kidd, Diego, Wright, Vel, Sutter and the serum Gm groups. Saliva was also examined for secretion of ABH and Le^a substances, and a search was made for abnormal haemoglobins.

GEOGRAPHICAL FEATURES[3]

101 The kingdom of Tonga consists of about 200 islands in three major groups, Tongatapu in the south, Vava'u in the north, and the Ha'apai
133 group lying between these. The islands of Vava'u are generally high and mountainous, those of Ha'apai and Tongatapu low-lying and of coral
131 formation. The kingdom lies between 15° and 23° south and 173° and 177° west, and is free from malaria.

[361] Nuku'alofa, the capital, is on the main island of the southern group, Tongatapu, and lies 1,100 miles north-east of Auckland. The population
161 of the kingdom in 1959[4] is given as 58,351, of which 56,669 are Tongans,
162 and 1,682 part Tongans, Europeans and others.

173 According to tradition, the inhabitants of Tonga came from Samoa somewhere about 950 A.D.

COLLECTION OF SPECIMENS

125 With the approval of the Government of Tonga, Dr. Sione Tapa,
126 Chief Medical Officer, generously undertook the selection of the subjects and the collection of the specimens. In this work, Dr. Sateki Tupou, Assistant Medical Officer, played a big part. From each selected person, a clotted blood specimen and blood in Alsever's solution with added antibiotics was obtained by venepuncture. The saliva specimen was obtained after the mouth had been rinsed with water, and was heated in a boiling water bath for ten minutes.

[101] The samples from the 200 people concerned in the study were collected in batches of 50; one batch in May 1959, two during July 1959, and one in September 1959. This allowed the collection to take place just prior to the departure of a ship for New Zealand. It also allowed the testing of each batch to be completed during the week after arrival

[122] [1] This work was carried out under a grant from the Auckland Medical Research Foundation.

[2] Kooptzoff & Walsh, 1957.

[3] Pacific Islands Year Book, 1956:109.

[4] Pacific Islands Year Book, 1959:111.

32: Staveley & Douglas D-4 (no date) 1959
OU9 Tonga OU9

in Auckland. This was the third week after the collection of the specimens from the subjects. The specimens were refrigerated at about 4° C. continuously from the time of collection.

The subjects selected by our colleagues have no known foreign ancestry. There were 98 males and 102 females, ranging in age from 14 to 43 years. Their distribution according to the island of their birth, is as follows:

Tongatapu	125
Vava'u	33
Ha'apai	26
Eua	8
Ninafo'ou	5
Mu'a	1
Niuatoputapu	2

Methods[5] and Results

The ABO System:

The red cells were tested with anti-A, anti-B and anti-H (Ulex Europeus). Those reacting with anti-A were titred against a group B serum showing a marked difference in titre between A_1 and A_2 cells. The serum from each individual was tested with A_1 and B cells independently.

TABLE I

No. tested	Phenotypes per cent				Genes per cent		
	O	A_1	B	A,B	O	A_1	B
200	43	45.5	8.5	3[6]	65.37	28.42	6.21

No A_2 specimens were found.

The MNS System:

Tests were made with anti-M, anti-N, anti-S, anti-U, anti-M^g and anti-Vw. Specimens positive with anti-S were tested with anti-s.

TABLE IIa

No. tested	Phenotypes per cent			Genes per cent	
	M	MN	N	M	N
200	OBS. 29.5	59.5[7]	11.0	59.25	40.75
	EXP. 35.1	48.28	16.62		

TABLE IIb

No. tested	S Positive per cent	Genes per cent		Chromosomes per cent			
		S	s	MS	Ms	NS	Ns
200	3.5	2.50	97.50	2.31	56.94	0.19	40.56

All specimens were positive with anti-U and negative with both anti-M^g and anti-Vw.

[5] Testing methods used were those detailed by Staveley and Douglas, 1958.

[6] Expected A,B = 3.5 per cent. $Chi^2 = 0.1082$. P = 0.75.

[7] $Chi^2 = 0.241$. P. = 0.56.

39: Gerstle & Raitt C,Q-4,5 (1952-1972)
1974 OU9 Tonga OU9

PREFACE

What we present here is basically a photographic narrative—though by no means comprehensive—of the story of Tonga: showing how the myriad, complex elements of her past evolved and became interwoven into the tapestry of life that this small but proud Polynesian Kingdom reveals today as her own.

Captions are bi-lingual; they were translated into Tongan loosely, rather than verbatim, in order to capture their meaning. Reproduced here are engravings taken from valuable, often rare volumes of exploring voyages for the benefit of Tongans who otherwise would not have the opportunity of seeing how early life in Tonga was—or at least how it was *viewed* by some of the first visitors to Tonga. Combined with these are modern-day photos which our photographer was able to procure only through the hospitality and kindnesses of many people in Tonga.

Producing *Tonga Pictorial—Kupesi 'o Tonga* was a mammoth undertaking which required the assistance and cooperation of countless people. Among those persons whom we of the Tofua Press would like to extend our special thanks for aiding us in our work, advising us about our problems, and caring for us in our times of need, are: Princess Pilolevu, the Government of Tonga, Honorable Ve'ehala, Toe'umu Fineanganofo, Minioneti Misieli, Tupou Posesi Fanua, Futa & Kaloni Helu, Laumakia Tupou, Liu & Maile Tongilava, Tu'ifua 'Utoikamanu, Pat Matheson, Siosiua Fonua, Tonga

[P. V-A]

basis of parent materials, relief and climate, Ha'apai soils should be very similar to those of Tongatapu, but in fact appear to have much lower levels of available phosphorus and possibly slightly lower levels of available potassium.[1] Soil analysis by itself, however, is not particularly conclusive, and no yield measurements or fertilizer trials have been made which might provide further evidence on the question of differences in soil fertility. Any decline in fertility that may have occurred has obviously been only moderate. The soils of Ha'apai are by no means nearly exhausted, and satisfactory yields are still obtained. During fieldwork it proved impossible to find a plot which farmers considered so depleted in fertility that it would have to be left fallow for more than about three years before reasonable yields could again be obtained. There is also no evidence to suggest that people in the areas of high population density have a diet poorer in quantity or quality than elsewhere in Tonga.

While there has therefore been some deterioration in the fallow vegetation and probably some decline in soil fertility there are as yet no indications of serious stress in the agricultural system. Food production per head may have been maintained by the increase in the length of cropping in relation to fallow, and by the shift in crops, and it is significant that, despite their complaints of declining yields, hardly any of the farmers questioned in the areas of high population density seemed to feel any need for changes in the bush fallow technique. The argument that changes in methods of maintaining soil fertility may not be necessary under Tongan conditions therefore receives some support, but it is not yet possible to determine whether the absence of serious stress reflects the ability of the soil to bear frequent cropping, or is more a result of the limited length of time the soil has been intensively farmed.

There are, however, further possible explanations for the failure to adopt new techniques. The rate of

[1] The samples were of the top 10 to 12 inches of *kelefatu* soils in the two groups. Ten samples were collected in Ha'apai and 21 in Tongatapu. The mean level of available phosphorus was 43 p.p.m. for the Ha'apai samples and 1052 p.p.m. for the samples from Tongatapu. The difference between these means is significant at the 2 per cent level. The mean level of available potassium was 373 p.p.m. in Ha'apai and 529 p.p.m. in Tongatapu, but this difference is not statistically significant.

[p.63-A]

54: Cook - G,T-5 (1777) 1967 OU9 Tonga OU9

went ashore again with a party of Marines and such of the Cattle as were weak, I remained there till sunset when every thing be[ing] settled to my satisfaction I returned on board leaving the Command on shore to Mr King. Tapa who was now become our fast friend and seemed to be the only active man about us, had a house brought on Mens shoulders a full quarter of a mile and placed by the one we occupied, in order to be near us as well in the night as day.[1]

SATURDAY 3rd. Began to Water, cut wood, and make hay for the catle. We at first began to cut wood abreast of the Ship it being there in the greatest plenty and the most convenient to get on board, but it proved to be of the Mancheneel kind, yeilding a juice of a Milky colour & of so corrosive a nature that it raised blisters on the Skin and injured the eys of such of the workmen as it happened to fly upon;[2] so that the wooding party were obliged to remove to the Cove where wee took off Water and kept guard, where the natives furnished us with other wood. Mr King and Mr Bailey began to observe equal altitudes of the sun in order to get the rate of the time keepers.[3] In the evening before the natives retired from our post Tapah harangued them for some time, we could only guess at the subject and judged he was telling them how to behave to us, and encouraging them to bring the produce of the island to market as a considerable quantity was brought the next day.[4]

The Discoveries Small bower Cable parted, being cut in two by the rocks, this occasioned us to look at ours which were found unhurt.

[1] 'Omai is of great use to us, not only as an interpreter, but in keeping up a good understand[g] between us & the Natives, for they pay him great attention & listen to the stories he tells them about Britannee, which doubtless tends to keep up our consequence, too apt to be lessen'd by the familiarity of our intercourse; & from which we find out that the Venereal disorder has been left among them; so it is, that wherever we go, we spread an incurable distemper which nothing we can do can ever recompence.'—King.

[2] 'As our people were cutting wood they cut some Manganeel trees, the Sap of which flew into some of their Eyes which made them nearly blind for several days, their heads swelling very much but they all happily recovered their sight again as well as before.'—Bayly, 6 May. The machineel is a West Indian tree, with a caustic and poisonous milky sap. Anderson got the name of the Tongan tree as 'faitanoo'—*fata'anu*. It was common to India, China and Malaysia as well as Polynesia, and Linnaeus had already named it *Excoecaria agallocha*—a tree growing up to about 36 feet, with smooth oval leaves, and the white, adhesive, irritating latex that damaged and alarmed the sailors.—'[A B]otanist might discover some differences, but to appearance any[on]e not so well skilled would certainly have no doubt of its being [manch]ineel.'—Bligh AL, I, p. 230.

[3] 'The 2d Went on shore to look for a convenient place to observe in where I met Capt Cook who objected to my going on shore with my Instr on account of the insufficiency of the Guard. 3d Received an invitation from Capt Cook to dine with him, when he proposed my going on Shore with my Astronom[l] Quad[t] only but not to carry my observatory, or at most to have only one between Mr King & me.—at last we settled it so as not to carry any observ[y] on Shore but to pack up the Quad[ts] every evening & deposit them in an Indian house that Capt Cook had hired for his people.'—Bayly T.

[4] 'another Chief of some consequence whose name is Kapee who frequently made long harangues to the People and kept them in good order, he was call'd by our People Lord North.'—Edgar, 2 May.

54: Cook G,T-5 (1777) 1967 OU9 Tonga OU9

adorned with tufts of trees and here and there plantations, make a very beautiful Landskip from whatever point they are viewed. Whilest I was viewing these delightfull spots, I could not help flatering my self with the idea that some future Navigator may from the very same station behould these Medows stocked with Cattle, the English have planted at these islands. Our guides informed us that all or most of the land on this island belonged to the great Lords of Tongatabu and that the Inhabitants were only tenants or rather Vassals to them; indeed it seemed to be the same at all the other isles except Anamocka, where there were some chiefs who seemed to act with some kind of independency.[1] Omai who was a great favourate with Feenough and these people in general, was offered to be made Chief of this island if he would stay amongst them, and it is not clear to me but Omai would have stayed if I had approved of it, but altho I disaproved of it, it was not because I thought he would do better in his own Native

Mon. 14 isle. The next Morning I planted a pine apple and sowed the seeds of Millons &c[a] in the Cheifs Planatation, and had a dish of Turnips to dinner, being the produce of the seeds I left last Voyage.

Tues. 15 The 15[th] I had fixed upon for Sailing, till Taoofa press'd me to stay a day or two longer to receive his present of yams &c[a] this and the daily expectation of seeing some of our friends from Tonga-

Wed. 16 tabu made me comply. Accordingly the next day I received the Cheifs present consisting of two small heaps of yams and some fruit. On this occasion most of the people of the island had assembled at the place, and as usual gave us not a little trouble to prevent them from pelfering whatever they could lay their hands upon. We were entertained with Cudgeling, Wristling and Boxing Matches, the latter both by Men and Women. And in the evening we were to have had singing and dancing, but an accident either put a total stop to it or at least prevented any of us from staying a shore to see it. This was a party of the Indians knocking down one of my people and striping him of every thing he had on his back. On hearing of this I immediately seized on two Canoes and a large hog and insisted on Taoofa causing the things to be restored and the offenders to be delivered up to me; he seemed much concerned at what had happened and forthwith took the necessary steps to satisfy me. This affair, so alarmed the people that most of them fled, however when they found I took no other measures to revenge the insult they returned.[2] It was not long

[1] This last clause is rather difficult to follow, unless Cook is referring to the pretensions of Finau—and the argument here seems to be political. The sentence generally seems to overdo the territorial power of the 'great Lords', although some of them had possessions in other islands than Tongatapu. 'Tenants' would certainly be more correct than 'vassals'.

[2] 'The natives here stript W[m] Collett y[e] Capt[ns] steward naked except is shoes, as he was

54: Cook G,T-5 (1777) 1967 OU9 Tonga OU9

before one of the offenders, with a shirt and a pair of Trowsers were delivered up to me, the remainder not coming before dark I was under a necessity of leaving them to go a board as there run so high a sea that it was with great difficulty the boats could get out of the Creek with day light much less in the dark. The next Morning I Thur. 17 landed again, provided with a present for the Chief in return for what he had given me. As it was early, there were but few people at the landing place and these few not without their fears, but on being assured by Omai we meant them no harm, they resumed their usual gaiety and presently a large circile was formed in which was the Chief and all the principal men in the island. The remainder of the Clothes were brought me, but as they had been torn off the Mans back by pieces they were not worth carrying on board. I now made the Chief a present which he divided amongst three or four other Chiefs, keeping only a small part for himse[l]f: this present so much exceeded their expectation that an ancient and venerable Chief told me that they did not deserve it, considering the little they had given me and the ill treatment one of my people had met with. I remained with them till they had finished their bowl of Cava, then paid for the hog I tooke the day before (the Canoes were before given up) set the offender at liberty without punishment and returned on board with Taoofa and one of Fattafee Polaho's servants, by whom I sent as a mark of my esteem and regard for that Chief, a piece of bar Iron, being as valuable a present as any I could make him. Soon after I got on board we weighed and with a light breeze at SE stood out to sea, and then Taoofa and a few others that were on board left us. On heaving up the Anchor we found that the Cable had suffered considerably by the rocks so that the bottom in this road is not to be depended upon and we experienced that there some times rolls in a prodigious swell from the SW.

We had not been long under sail before we observed a sailing Canoe coming from Tongatabu, and put into the Creek before which we had anchored; some hours after a small Canoe conducted by four men came off to us, for as we had but little wind we were no great

'takeing a walk.'—Griffin. Williamson has a characteristic entry, 16 July. He had been with Anderson on a plant-hunting expedition: 'soon after our return from y^e^ hills one of y^e^ Capt^n's^ Servants came to us naked, he had also been up those hills from whence we had just come, could this matter have properly been sifted, I am pretty certain the servant would have been found the aggressor, but he was y^e^ Capt^ns^ servant, & in him y^e^ Capt^n^ felt himself attack'd, the Marines were immediately ordered on shore, some of y^e^ natives seized, sent on board & put in irons until y^e^ cloaths were return'd, at y^e^ same time, that, the Officers & petty Officers might be robb'd or ill used, without any steps being taking [*sic*] to redress or prevent it; as I have already instanced in y^e^ Midshipman who had his hanger taken from him when I sent him on duty.'

55: Anderson D,T-5 (1777) 1967 OU9 Tonga OU9

Ma'tangee	The wind
Gee'fai	Where
A'fai	When
+'Reta	Anger
+'Patoo.....	A stroke—To strike
+A'faia	How many
'Koukou.....	To bathe
+'Loee, or Lohee	A lie
+'Monee	Truth
'Maha	Finished—at an end—Empty
'Aho	The dawn or day break
+Le'laiee	Good
+Kovee.....	Bad
+La'langa	To make or fabricate
Mohe	To sleep.

Besides these we have been able to collect about six hundred of their words, amongst which are terms that express numbers as far as a hundred thousand, beyond which they never would reckon and probably are not able, as after that they commonly us'd a word that expresses any indeterminate number.

The number of islands we have seen are but a small part of what these people know, for we have procur'd names of above a hundred and twenty from them and they have reckon'd upwards of a hundred and fifty to us by bits of leaves. Thirteen of these are said to be high or hilly, such as To'fooa and O'ooa or Middleburgh, and thirty seven large, of which I cannot tell any other method to determine the size than by saying they must all be larger than Anna'mooka which is rank'd amongst the smaller isles. Of these Va'vaoo has already been mentioned as lying N° E¼y from Hapaee, which is said to have a good harbour, is free from shoals and seems to be a pretty considerable place from their frequent mention of it. Ha'môâ again is more northerly and is said to be even larger than Tonga, which however has conquerd it and Poulaho frequently resides in this Island.[1] It is high and has good water, producing every thing found at Tonga in the greatest abundance. The manners of the people & their Language begin to alter here for they do not bury their dead as at Tonga but expose them to consume on a sort of scaffolds. Their songs & dances, some of which have been adopted at Tonga, are also different; & as we have seen houses built after the model of those of Hamôâ it

[1] This last information is wrong. Tongan forces did conquer Samoa, or part of it, from perhaps the end of the 12th century, and the Tu'i Tongas did spend some time there; but they were driven out about the middle of the 13th century. Later Tongan rulers sometimes visited the group, but it does not appear that any of them did so in the 18th century. Possibly Anderson's informants were giving their own country 'a good build-up'.

ABSTRACT

121 The problem of this dissertation is to devise a method to analyze the structure of dance. Ethnoscientific in orientation, the method 128 presented borrows heavily from structural analysis as used in linguistics, which by induction seeks to discover units and patterns valid in terms of a particular system. The method devised is then used to analyze the structure of Tongan dance.

121 The two most basic levels of dance organization derived, kinemic and morphokinemic, are comparable to phonemic and morphemic levels in [535] linguistic analysis. The kinemic analysis of Tongan dance isolates 47 movement units which are the basic components in that dance tradition. Kinemes may have several allo-kines which vary physiologically but are considered the 'same' or a 'variation' of a kineme [124] by 'native speakers' of the dance tradition. The kinemes with their several allo-kines are 'kinetically' notated in Labanotation, a graphic system for recording human movement.

The second level of dance organization is called morphokinemic and combines sequences of kinemes into recognized movements. The internal structure of morphokines is described in terms of kinemes and the external distribution is discussed in terms of co-occurance of morphokine classes.

The third level of dance structure in Tongan is called the motif level. This section enumerates some of the frequently occurring combinations of morphokines that form short entities in themselves.

121
126 Dance ethnologists, for the most part, have not even entertained the possibility that a method analogous to that of linguistics is even feasible. Using descriptive tools, they record a dance as it occurs during a particular performance, and this often is second hand as it is usually done from motion pictures. This can give a description of how a dance was performed on a particular occasion. A corpus of material can be collected and described in this way. It can, however, tell us little that is ethnographic or ethno-scientific unless it is presented to holders of the tradition for confirmation. It seems to me that the dance ethnologist should also try to find what the people themselves consider to be the significant elements, just as a linguist does. We can derive from the judgment of native speakers if language sounds are considered to be the 'same' or 'different,' how much something can vary and still be the 'same,' and what is essential in the linguistic habits. Dance is equally amenable to this same kind of questioning.

A problem that the linguist and ethnomusicologist does not have is one of the greatest obstacles to this type of analysis in dance. The linguist and ethnomusicologist deal in sound and have the efficient tape recorder to record and instantly play back the sound to the informant to judge 'same, different, variation, good, bad, etc.' The dance ethnologist deals in movement and has no comparable mechanical device. True, there are motion pictures, but they are not yet instant developing. In most field situations there is little possibility of

121 developing them, let alone play them back for informants. Perhaps
126 instant videotape might solve the dance ethnologists' dilemma. Without these aids the only hope is for the ethnologist himself to become a 'native speaker' of the dance tradition. This is a second-rate solution at best, for learning to perform the dance tradition accurately, and especially all variations and genres is a time-consuming job and probably not possible in the time available for fieldwork. However, I see no alternative than for the ethnologist to do the 'playback' for native identification and evaluation through his own medium of dance--his body. And there is always the consolation that one learns what is 'wrong,' or 'unacceptable,' or 'different' by making mistakes.

The inadequacy of descriptive words or photographs, even of motion picture film, for the analysis of dance necessitates a more
126 precise way of describing and recording it. To record or describe the physiological aspects of Tongan dance, I shall use Labanotation, a graphic system of recording movement developed by Rudolf Laban (Hutchinson 1954; for use in anthropology see Kurath and Marti 1964), which is an extremely precise system capable of recording even the most subtle movements. It is complete and accurate in itself, however, motion pictures, still photographs, and verbal descriptions are useful supplements in the same way that a recording is a useful supplement to a music score. As a system for recording movement, Labanotation can be used in a way comparable to a phonetic notation of speech sounds.

126 Just as a linguist working with a living language subjects a phonetic grid to phonemic analysis to obtain an inventory of the basic phonemes in a language, a dance ethnologist can subject an 'etic' movement grid recorded in Labanotation to 'emic'[1] analysis in order to ascertain which movements have emic relevance and thereby obtain an inventory of basic dance movements comparable to the phonemes of a language. Meaningful combinations of these emic units are roughly analogous to linguistic morphemes, and these, in turn, form motifs, and finally whole dances.

121 This type of ethnoscientific analysis will provide a means of objectively ascertaining the basic dance units and the ways in which they can be combined. It will also describe the structure of whole dances. A dance in Tonga can be defined as 'a totality in which structural elements have a standardized chronological order.'

The emphasis is on the form or structure of the dance, its parts, and their combinations into integrated unities. The aim is to present an objective scientific method of describing and analyzing dance movements fully and adequately, and in such a way that it reflects the movements as known and performed by Tongans themselves. Thus, descriptions of dances and movements occurring within a culture as seen from

---

[1] The terms 'etic' and 'emic' are derived from 'phonetic' and 'phonemic.' 'Etic' refers to actual differences, for example, in sound or movement, that are culture free, while 'emic' refers to differences that are recognized by a particular culture. For a discussion of this differentiation see Sturtevant, 1964, pp. 101-103.

specific research died under me, so to speak, this did not prove to be an insurmountable problem. After a month or so, some of my informants were willing to teach me some dances and were willing to talk about dance. In some ways this was an advantage, for if I wanted to know how to do something, they could not tell me to go and look at a performance, but had to demonstrate instead.

The last nation-wide celebration with dance performance was in 1962. It is not very often that a large-scale celebration is held, so the Queen's death was not the only reason that I could not observe one. I did, however, miss the minor dance performances which would have been held if the Queen had not died during my residence. Fortunately, during my first field trip and the first three months of my second field trip I did see performances of all the dance genres. I also learned to perform a dance of each genre. From observation, participation, and persistent questioning my research has enabled me to delineate the structure of Tongan dance and its function in the society.

Many other aspects of life were studied that will not be presented here. A good deal of my time was occupied with gathering of texts that dances accompany. These texts are not written down but are reconstructed each time they are to be performed by the people who know them, and it was particularly difficult to gather these people together especially when it was tapu to sing dance songs. These texts are very important in ascertaining the meaning of the dance. The

126 gathering, translation and search for meaning of these texts were
128 probably the most frustrating aspects of my research. (See Kaeppler
121 1967a for an interpretation of one of these texts.) I also worked
123 on the interrelations between tapa design, the dances, and their texts,
and I was instructed in the making of tapa, mats, and other kinds of
122 plaiting. Actually, it was my good fortune to be in Tonga at the time
of the funeral and mourning ceremonies of the Queen. These were not
only illuminating in themselves but gave me insights into aspects of
121 culture that I might otherwise have missed. Throughout my research,
181 no matter what aspects of culture I examined, the fundamental theme
of social organization always arose. Language, material culture,
dance, religion--all referred ultimately to the fundamental emphasis
of this society on its socio-political system.

61: Kaeppler E-5 (1964-1967) 1977 OU9 Tonga OU9

535 192 for the category of faiva. The category name not only expresses what kind of faiva will be performed, but also communicates what kind of occasion it will be. An occasion on which lakalaka are performed is likely to be quite different from one on which tau'olunga are performed. In fact, however, tau'olunga may be included on a program with lakalaka.

It often happens in folk taxonomies that there is a 'hole' at one level of contrast, that is, there is no term for that level in the native language, or at least none was elicited. In the case of Tongan dance a terminological hole exists at the highest level of abstraction for there is no term for the entity we are talking about. I will, for want of a better term, use 'dance' in this dissertation to indicate the Tongan concept of 'faiva with haka.' The reader must keep in mind, however, that the activities implied by the English term 'dance' are not identical, the principles which separate dance from non-dance are different, and the functions of dance are strikingly divergent.

METHODOLOGY

126 Describing dance has long created a problem for anthropologists, dancers, and writers of all sorts. It is sometimes possible to convey the atmosphere and excitment of dance in words, but it is impossible to reconstruct the 'artifact' through words, as dance has too many dimensions which operate simultaneously. Movements of various parts of

126 the body have pattern and operate in space and time. There may be instrumental and vocal music and texts that are associated with movement. Also to be considered are costumes and other wearing apparel and properties, the dance space, and the relationship of dancers to each other and to the audience. All of these may have pattern, regularity and structure and if so can be analyzed as form. To make a formal analysis it is necessary to find the significant parts of the form and the ways in which these parts are combined into a totality. It is necessary to have an object to analyze. The transitory nature of dance precludes the possibility of using the dance itself for analysis, thus a symbolization of the 'object' is imperative. This can be done most efficiently with a graphic notation through which movements, phrases, sections, and whole dances may be analyzed and compared in relation to each other.

It is difficult to notate in two dimensions a three-dimensional body movement that takes place in time. Many systems have been tried and rejected because of their lack of precision. One method which overcomes many problems of earlier notation systems is Labanotation which was first published in 1928 by Rudolf Laban. In it he introduced the vertical, symmetrical staff, read from the bottom up and clearly picturing, for the reader facing the notation, right and left, front and back. The other invention which has made his system so flexible is using the length of the symbol on the staff to indicate duration of movement. These two innovations have made possible the

126 first truly successful method of movement notation. Since Labanotation records in vividly legible form all possible movements of the body in space and time (and in a dimension heretofore unattempted - dynamics), it overcomes the obstacles which had impeded the progress of all earlier systems." (Hutchinson 1954, pp. 3-4).

The Labanotation staff is read from the bottom up, with the music staff running parallel to it and to its left with the measure lines connecting the two staffs.

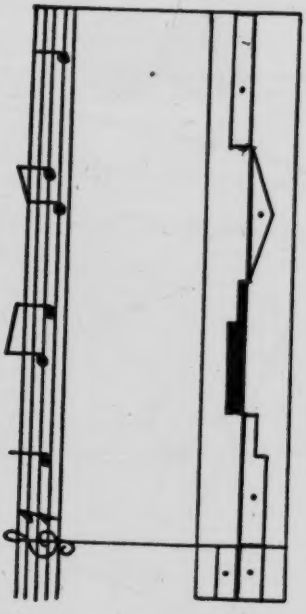


Figure 3.1. Notation staff for music and dance.

126 Figure 3.1 is a simple example. It shows one measure of music and one measure of dance with foot movements only. On the first count there is a step forward on the right foot. On the second count the left foot steps forward and the leg bends. On the third count the right foot steps to the right side. On the fourth count the left foot steps to join the right foot. The symbols are explained in Chapter IV.

Labanotation is not a shorthand system, but rather, it necessitates a detailed analysis of the movement of every part of the body as it moves through space and time. In order to notate accurately it is helpful (indeed almost necessary) for the notator to be able to perform the movements himself in order to analyze exactly what the various parts of the body are doing and in what sequence they are done.

Although the basic principles are simple and logical, it is necessary to undertake a formal course in Labanotation to be able to read and write, just as a course in phonetics is necessary in order to hear and write accurately the language of a people. Labanotation is similar in its scope and precision to the International Phonetic Alphabet which is a basic tool for research and analysis in anthropological linguistics.

121 Recording dances in Labanotation makes it possible to analyze and thus describe from the ethnographer's point of view the structure of various types of dances existing in a society and to isolate

A [See category 116, pp. 37-102--Analyst]

121 term in a different sense.[2] Kinemes in his system have meaning--while in this system the requirement is that they are significantly different in movement to the 'native speakers' of a given dance tradition. Meaning in this study is not relevant until the morphokine level.

The first aim will be to isolate the significant units of movement, kinemes, for the dance culture of Tonga and present them in the form of a list or inventory. It will then be shown how these kinemes combine to form morphokines and how they, in turn, combine to form 126 motifs and finally dance types. Labanotation, as noted above, is capable of recording all forms of movement in very precise terms. However, only a small segment of all possible movements are significant to the Tongans and thus only the relevant parts of the Laban system will be used. Labanotation symbols will be explained only as needed. For a complete list of those used in this study see Appendix C. A

128 Kinemes will be designated by a letter with a numerical subscript. The letter will designate the part of the body while the numerical subscript will designate what it is doing. For example, 'W' designates 'wrist,' while $_1$ designates that the wrist is bent forward and $_2$

---

[2] "Turning to microkinesic analysis, experiment reveals that the various kines may be variedly produced in structural organization or in degree of stress or extent of completion of the particular motion. These variations, which do not change differential meaning, are described as allokinic. From the abstraction of the class of allokines is derived the given kineme which may be lid closure, or head set, or brow position, or mouth behavior, etc." Birdwhistel 1952, following page 75.

A [See category 126, pp. 318-319--Analyst]

595 [123] It was quite often the aspect of head movement that they talked about when speaking of my progress with each other (for example, "ta'ahine poto fakateki" which means 'clever at moving the head'). There are two types of head movement but only one of them is emic. The emic head movement listed below as a kineme is named, fakateki, which gives evidence that it is recognized as a movement.

Hips

In Tongan dance the hips do not move in a way that is significant or emic to Tongans. However, there is a natural movement of the hips following the leg movements. In the case of the hips, absence of exaggerated movement is considered significant. In fact at one very high level of contrast in which Tongan dance is distinguished from non-Tongan dance, the principle or dimension of contrast is hip movement.

Three body parts have significance to a structural analysis of Tongan dance. Motions and positions which derive from use of the head, legs, and especially of the arms will be used in analyzing the formal structure of Tongan dance at the kineme level.

Head Kineme

The first part of the body to be considered for emic significance is the head. There is only one head kineme that has such significance and this is a tilt where the head moves quickly to the right side.

595 126 128 The head will be labeled 'H' to abbreviate 'head.' The subscript $_1$ denotes the occurence of the side tilt.

126
128
595

In Labanotation:

H_1

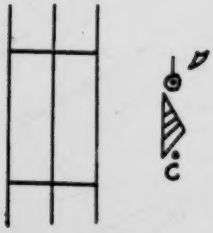


Figure 4.1. Side head tilt, H_1.

In Labanotation 'C' is called a presign for the head, indicating that what follows it in that column refers to the head. A triangle facing right means it moves to the right side. Slanting lines within a symbol mean that it is in a high position. The ' ' means 'return to normal.' The '›' designates that '' refers back to the presign 'C'. The '•' designates that the movement is not quite as far as the symbol ' ' indicates, that is, it is at an intermediate position between normal ' ' and ''. The symbols say:

 return to normal

 tilt to side, high position

C presign for the head

In this analysis H_1 can be used to refer to the side tilt movement of the head.

An etic element of movement is present in head kineme, H_1, which will not be given a componential notation because it is not

126 contrastive. This is an accent which can be used in movements of the
128 head, legs, and arms. It is usually used on the beat and often marks
535 the end of a movement. The heaviness of accent varies with the individual. Accent is written in Labanotation as '▽'. When it is filled in '▼' it signifies a heavier accent. Adding an accent changes the manner of performing a movement. But it is not a kineme because its presence or absence does not make a movement different. Accents usually occur in specific places in certain movements. Failure to use the accent does not make the movement wrong but is usually on the order of an allo-kine.

535 Leg Kinemes

The second part of the body with emic significance is the legs. The letter 'L' abbreviates 'legs.' Important in Tongan dance is how the body is being supported and what the supports are doing. In Tongan dance legs do only a specified number of things: they fold cross-legged, they bend down and up, they step, they turn, and they rotate.

126 Labanotation symbols are based on rectangles and it is easiest
128 to understand their use in the case of leg movements. There are three levels of support--normal, middle, and high. These levels are incorporated into the symbol. Normal level is designated by a dot in the middle of the symbol; low level, in which the knees are bent, by a shaded symbol; and high level, in which one would be standing on

126 one's toes, by slanting lines (as in the triangular symbol in Figure
128 4.1). In Tongan dance only normal and low levels are significant for
[535] leg movements so only the dot and shaded symbol will be used.

535 The Labanotation staff has two columns to the right and two
126 columns to the left of a center line for notating leg movements.
128 The center columns are for the supports, which in Tongan dance is either the legs or, in a sitting dance, the hips. The second columns from the center line are for leg gestures.

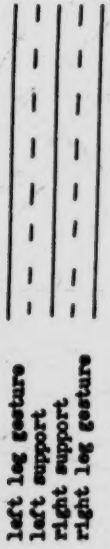


Figure 4.2. Leg columns of Labanotation staff.

61: Kaeppler E-5 (1964-1967) 1977 OU9 Tonga OU9

535 In Tongan dance there are eleven significant variations of leg movement. They are enumerated below. For simplicity the Labanotation will be for the right leg, but the movements can be performed with either leg.

L_1, the first leg kineme, is a forward step in normal or middle level. [126] [129] Note how the rectangle is altered to point forward--that is, to the top of the page. There are two allo-kines noted. Allo-kine a is a normal or walking size step. Allo-kine b is a very short step. In Labanotation an 'X' preface to the rectangle indicates a short step. The length of the step is not significant, and can vary from a walking size step to a step of only a few inches. In the photograph my informant has just stepped forward and is preparing to lift her back foot for another forward step.

Figure 4.3. Kineme L_1, allo-kine a, normal size step forward.

535

47

L_1

Figure 4.4. Kineme L_1, allo-kine b, short step forward.

L_2 is a backward step in normal or middle level. Note that the [126] [128] rectangle points backwards. Again, there are two allo-kines showing that the length of the step is not emically significant.

L_2

Figure 4.5. Kineme L_2, allo-kine a, a normal size step backward.

Figure 4.6. Kineme L_2, allo-kine b, a short step backward.

535 L_3 is a step in 'place.' 'Place' in Labanotation terms means to the center of weight. Thus, a step in 'place' can be made without moving the center of weight as in allo-kine a where the foot is lifted and then steps in the same place. Or a step in 'place' or 'to place' can be made to where the center of weight is. In allo-kine b after a forward step is taken, the other foot is brought to the center of weight or to 'place.' In allo-kine c the foot is brought to the center of weight after a backward step. In allo-kine d after taking a step to the left with the left foot '◁', the right foot steps left in order to bring it to the center of weight or to 'place.'

[126] [128] 'Place' or to the center of weight is symbolized in Labanotation by '◇'. In the photograph my informant is just about to put her foot down in 'place.'

This kineme is an ambigious one, not agree upon by my informants. Some informants classed these four allo-kines together, the significant dimension being that the feet are brought together and the weight taken by both feet. Others considered only allo-kine a, stepping in place, to belong here, while allo-kine b should be a part of L_1, allo-kine c should be part of L_2, and allo-kine d should be part of L_4, the significant dimensions being a move forward, backward, or sideward.

595
L_3

Figure 4.10. Kineme L_3, allo-kine d, after a left side step, right foot steps in place.

[126] [128] L_4 is a side step in middle level. Note that the rectangle becomes a triangle pointing to the direction in which it is going to move. There are two allo-kines. Allo-kine a is a normal size step about 12-15 inches. Allo-kine b is a small step, often only 2 inches. The size of the step is not emically significant.

535 L_4

Figure 4.11. Kineme L_4, allo-kine a, a normal size step to the side.

Figure 4.12. Kineme L_4, allo-kine b, a short step to the side.

L_5 is a jump with both feet which can be performed to the front, 535 to the back, or to either side. In Labanotation when no symbols 126 appear in the support (center) columns it means that the body is in 128 the air. In performing a jump the preparation is shown below the double line. The supports bend (indicated by an 'X' prefix in the leg gesture column), they lift from the ground (there is nothing in the support column), they return to the ground (in these examples after the double line) which in Tongan dance is on the beat.

535 [126] [128]

L_7 is a turn. This is accomplished in the Tongan movement system by turning the body and then stepping. The symbol for clockwise rotation is ' ' while ' ' means it is a half turn, or ' ' means a quarter turn. Allo-kine a consists of turning the body one quarter turn and stepping slightly forward in the direction of the turn. Allo-kine b consists of stepping forward and making a half-turn on that foot. Allo-kine c consists of stepping in place and making a full turn while the other lower leg is raised to the back. This kineme is an ambigious one. Informants usually say there is only one kind of turn, meaning allo-kine a, which is the traditional type of turn. Allo-kines b and c are used mainly in tau'olunga, which is a recent dance genre.

L_7

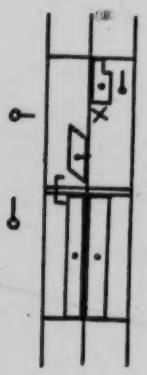


Figure 4.18. Kineme L_7, allo-kine a, body turns one quarter and foot steps slightly forward.

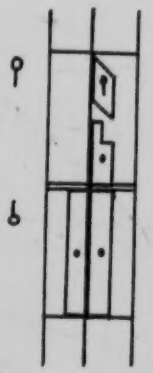


Figure 4.19. Kineme L_7, allo-kine b, the right foot steps forward and the body turns one half turn left.

535 L_7

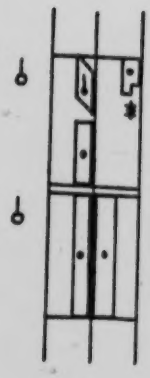



Figure 4.20. Kineme L_7, allo-kine $\underline{c}$, the left foot steps in place, the body turns one whole turn left, while the right lower leg is raised backward.

L_8 is a rotation of the lower leg that moves the heels out and in. This is usually used to mark time when no other foot kinemes are used. It is notated in the leg gesture column (second column from the center) because the legs rotate but the supports do not move. A hold sign 'o', is placed in the support column to show that there is no movement or change in weight distribution. Sometimes this lower leg rotation is very small and scarcely perceptible to the observer. It is important to the dancer, however, because the movement helps him to feel the pulse of the music.

535
126
128
535

535 L_8

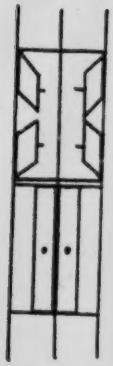


Figure 4.21. Kineme L_8, the heels are moved out and in to mark time.

L_9 consists of a quick lifting of the foot by a bend of the knee. One foot steps and receives the weight and the other knee quickly bends. The knee bending is notated in the leg gesture column. The '*' designates the amount of flexion of the knee. In the photograph in Figure 4.22. the dancer on the left is just about to take a forward step while the dancer on the right has just lifted her left leg with a quick bend of the knee.

535
126
128
535

535 L_{11} is the cross-legged sitting position. In the Tongan version of sitting cross-legged the upper legs should be nearly parallel, especially for women. The left lower leg is placed to the back right diagonal forming an acute angle at the knee. The right lower leg is forward left diagonal forming a 90° or larger angle at the knee. The 535 right lower leg is thus in front of the left leg. The hips are 126 indicated by '+'--note that this symbol is in the support column 128 where the stepping of the feet was in the previous kinemes. The '⧺' designates the upper leg; '⧺' designates the lower leg; '▯' designates the back right diagonal; '▯' designates the forward left diagonal; '—o—' means 'in front of'; '⌒' means a touch. While in this position, the right foot, '⧺', marks time by moving up and down.

535

L_{11}

Figure 4.27. Kineme L_{11}, cross-legged sitting position. The girl on the right of the photograph is in the 'correct' sitting position. The other girls have their legs too far to the sides. This is quite often the case with young girls. Men also do not keep their upper legs as straight forward as do the women.

535 **Arm Kinemes**

The third and most important part of the body emically significant in Tongan dance is the arms. The arm movements, intricate and complex as they seem, can be broken down into six basic groups of kinemes. These groups are 1) rotation of the lower arm, 2) bending and flexing of the wrist, 3) eight finger positions, 4) five directions for the facing of the palm, 5) seventeen arm positions, and 6) touching and brushing. It is the combination of these 35 kinemes that form Tongan arm movements.

126 In Labanotation it is not usual to abstract just a part of a limb and notate its movements in space without saying where in space the limbs are. For example, one doesn't ordinarily notate a rotation of the lower arm without notating in what position the arm is held. However, because I want to notate each kineme separately, it will be necessary to do this. In the terminology used here, the position of the arms adds an additional contrast. Thus when I notate kinemes without arm position, I do so because the arm position is also significant in the movement system. A kineme in one arm position is different from the same kineme in a different arm position. Each kineme is significant by itself, and combinations of kinemes result in a higher level of structure (morphokine). Thus, in order to analyze the smallest significant units of movement, it is necessary to treat all aspects of motion and position separately.

126 Another thing must be noted about the way I use the Labanotation system. In writing Labanotation it is usual to notate a movement in the most economic way. However, I may write movements in a manner that would be considered redundant in regular dance notation, using this redundancy to make clear exactly what kinemes significant in Tongan dance are being used. This procedure will facilitate comparison of various movements.

535 The six groups of arm kinemes are not equally important at the emic level of Tongan dance. The most important and discretely contrasting are arm rotation, wrist flexion, and finger position. The palm facings and arm positions constitute the 'environment' in which these three groups of kinemes occur. Perhaps we can say they are comparable to the 'noise' or 'redundancy' in speech as these terms are used in communication theory.

535 **Lower Arm Rotation**

The first and most distinctive kineme in arm movements of Tongan dance is the rotation of the lower arm. It is this movement, so often repeated, that is perhaps the most distinguishing characteristic of Tongan dance. This kineme will be notated R_1. 'R' abbreviates 'rotation.'

R_1

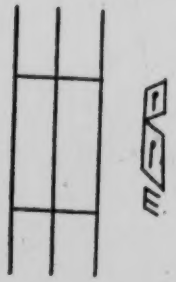


Figure 4.28. Kineme R_1, the lower arm rotates.

535 The symbol for the lower arm is ' '. The clockwise rotation
126 symbol is ' ' (see also L_7 and L_8 above); and '' is counter-
128 clockwise. As in the case of leg movement, a half turn is notated ''. I have notated this turn as a half turn, however, the amount
535 varies from one half to one quarter. The half turn is at the wrist end of the lower arm--it is impossible to turn the elbow end of the lower arm a half turn.

61: Kaeppler E-5 (1964-1967) 1977 OU9 Tonga OU9

535 **Wrist Flexion and Extension**

The second type of arm kineme is flexion and extension of the wrist. In many arm movements there is a wrist flexion which follows naturally from the movement of the hand and these need not be notated. The two wrist kinemes noted are those where there is a definite emphasis on wrist motion and which are significant in the movement system. When the wrist is relaxed with no flexion or extension it can be said to be in 'normal' position. The two kinemes begin from this normal position. 'W' abbreviates 'wrist.'

W_1 is a kineme in which the wrist is extended--that is, bent backward. The amount varies from slightly extended, '𝍐' to as far back as is comfortably possible, '𝍐'. [126] [128]

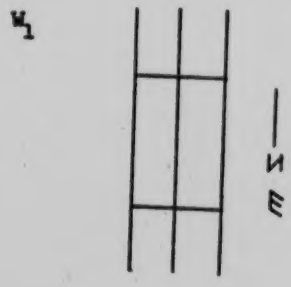


Figure 4.30. Kineme W_1, allo-kine a, the wrist extends part way back.

535 W_1

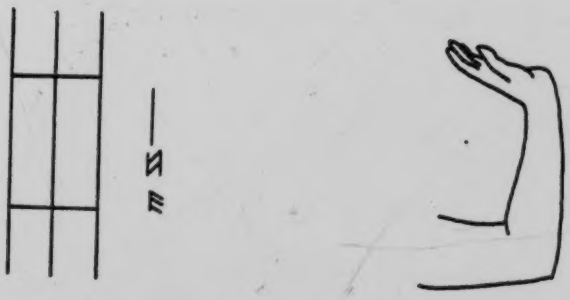


Figure 4.31. Kineme W_1, allo-kine b, the wrist extends fully backward.

W_2 is a flexion of the wrist that carries the hand forward.

535 The amount varies from slightly flexed, '✕', to flexed fully forward,
126 '✳'. (Note that ' ' is the same symbol as for the lower arm.
128 There should be no confusion here as the lower arm cannot bend. It is obvious from context that '' in this case refers to the wrist.)

535 W_2

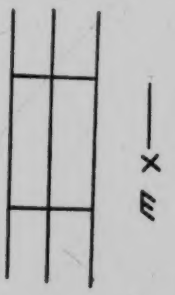


Figure 4.32. Kineme W_2, allo-kine a, the wrist flexes part way forward.

535 P_1 is a kineme in which the palm faces forward or away from the
535 body. Palm facing is notated '⊡'. Note that the forward pointing
126 rectangle, '▯', is the same symbol as used for forward steps (L_1
128 above). This symbol is used throughout the Labanotation system to indicate forward.

535

P_1

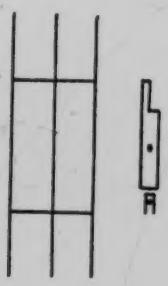


Figure 4.34. Kineme P_1, the palm faces forward.

535 P_2 is a kineme in which the palm faces backward or toward the [126] [128] body. Note that the backward pointing rectangle indicates facing back.

P_2

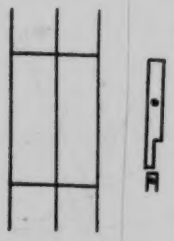


Figure 4.35. Kineme P_2, the palm faces backward.

P_3 is a kineme in which the palm faces upward. This is [126] [128] indicated by a 'place' symbol with slanting lines, '▨', meaning it faces 'place high.'

P_3

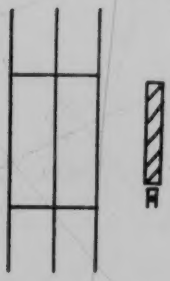


Figure 4.36. Kineme P_3, the palm faces upward.

535 P_4 is a kineme in which the palm faces down. This is indicated by a 'place' symbol that is shaded in, '▮', meaning it faces 'place low.'

[126]
[128]

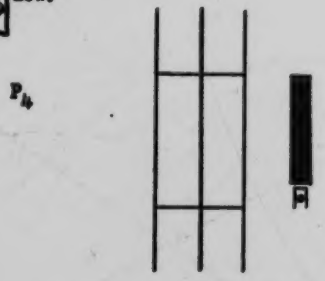


Figure 4.37. Kineme P_4, the palm faces down.

Figure 4.38. The palms face up, P_3, and down, P_4.

535 P_5 is a kineme in which the palm faces to the side. Side is indicated by a triangle pointing to the side indicated.

[126]
[128]

P_5

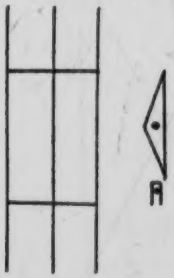


Figure 4.39. Kineme P_5, the right hand faces to the left.

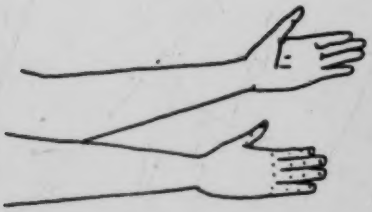


Figure 4.40. The hands face to the sides.

61: Kaeppler E-5 (1964-1967) 1977 OU9 Tonga OU9

535 Finger Positions

The fourth group of kinemes is the flexion and extension of the fingers. There are eight finger kinemes that are significant or emic in Tongan dance. Although physiologically some of these kinemes are really a flexion of the palm, the Tongans contrast them with other finger positions--thus, they will be referred to here as finger kinemes. 'F' abbreviates 'fingers.'

535 126 128 F_1 is a kineme in which the fingers are extended and flat. The symbol for fingers is ' '. There are two allo-kines. Allo-kine a is a straight position of the fingers, this is designated by a single extension symbol, ' '. In allo-kine b the fingers are slightly extended backward, this is designated by a double extension symbol, ' '. Allo-kine b is used when opening the fingers from another F 535 kineme and usually is used to mark the beat. In kineme F_1 the thumb can either be held parallel with the fingers as in the drawing in Figure 4.41. or it can be slightly opposed. When the thumb must be opposed this is considered a different kineme, F_7.

F_1

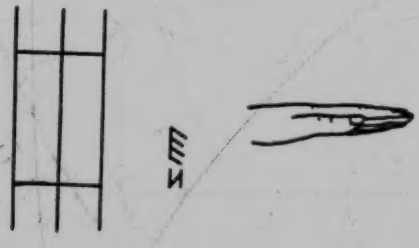


Figure 4.41. Kineme F_1, allo-kine a, fingers flat in relaxed position.

595

76

F_1

Figure 4.42. Kineme F_1, allo-kine b, fingers extended backward.

F_2 is a kineme in which the fingers are slightly flexed. [126] [128] Flexion in Labanotation is indicated by '✕'; '✕' indicates slight flexion; '✳' indicates flexion that forms approximately a circle; '✱' indicates flexion in which the fingers are fully flexed forming a fist. Other degrees of flexion and extension of fingers are physiologically possible and Labanotation recognises them. In Tongan dance, however, other degrees are not significant categories.

F_2

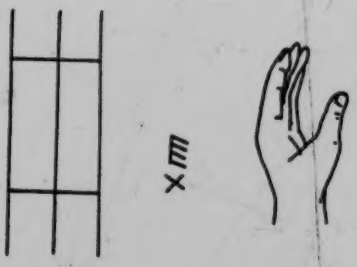


Figure 4.43. Kineme F_2, fingers slightly bent.

61: Kaeppler E-5 (1964-1967) 1977 OU9 Tonga OU9

595 F_5 is a kineme in which the fingers are flexed to form a fist, but the thumb is extended. In this case it is necessary to indicate [126] [128] the fingers individually. This is done by placing dots on the general finger sign to indicate the fingers referred to. For example, ' ' indicates the thumb, ' ' indicates the first finger, and so on.

F_5

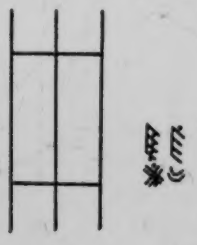


Figure 4.46. Kineme F_5, fingers form a fist and thumb is extended.

F_6 is a kineme in which the thumb and index finger are extended and the other three fingers are fully flexed.

F_6

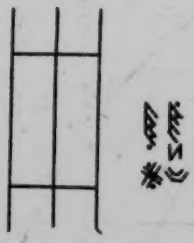


Figure 4.47. Kineme F_6, pointing position.

535 F_7 is a kineme in which the thumb and fingers are extended in opposition to each other. The defining feature of this kineme is that the thumb is extended at a 90° angle to the fingers, which distinguishes it from F_1.

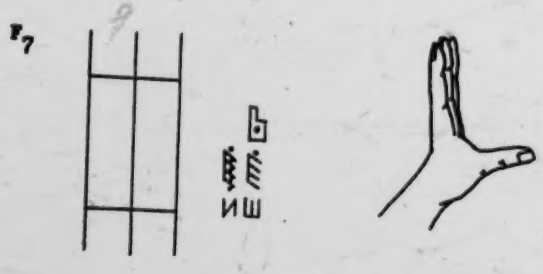


Figure 4.48. Kineme F_7, thumb extended at 90° angle to fingers.

[126] [128] F_8 is a kineme in which the fingers and thumb are extended in opposition to each other and the palm is flexed, ''. The position is the same as F_7 except for the flexion of the palm.

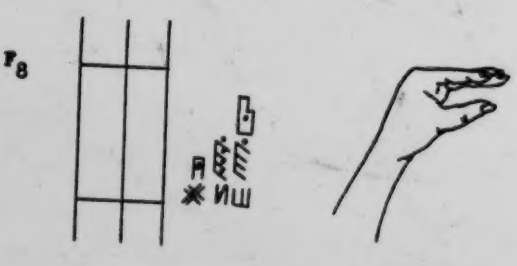


Figure 4.49. Kineme F_8, thumb is flexed parallel to fingers.

A_2 is an arm kineme in which the arm is raised to the front. Labanotation has no single symbol for this position, therefore it is necessary to write a position between the two closest ones. In this case, A_2 is between the Labanotation symbols for forward middle (A_1) and that for forward high (which is not a significant category in Tongan dance).

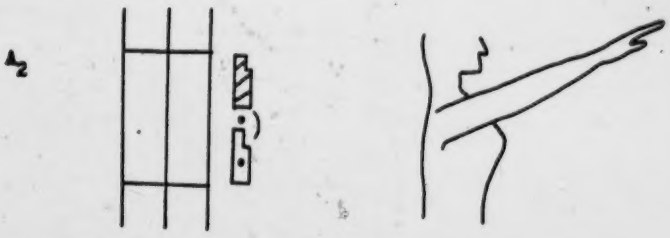


Figure 4.52. Kineme A_2, arm raised forward.

A_3 is an arm kineme in which the arm is in a forward position but in low level.

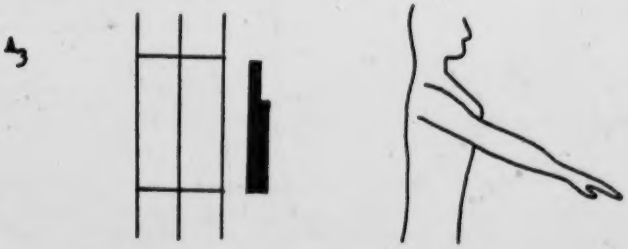


Figure 4.53. Kineme A_3, allo-kine a, arm is forward low.

535 Touching Kinemes

The last group of arm movements significant in Tongan dance 535 involves touching or brushing. 'T' abbreviates 'touching.' T_1 126 designates touching and T_2 designates brushing. In Labanotation a 128 bow '⌒' is used to symbolize touching. By connecting the appropriate columns, the two ends of the bow show which parts of the body are touching. (A bow with broken lines '⌒' shows that two body parts are related to each other or near each other but not actually touching.)

T_1 is a kineme that consists of touching the hand to a part of the body. In the example notated the hands, '≡', touch.

535 T_1

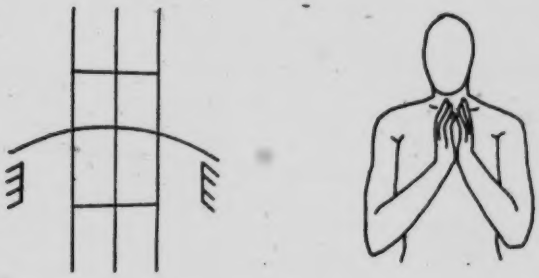


Figure 4.78. Kineme T_1, a touch. (In this case of the hands.)

121 The units derived at the third, motif, level are similar to motif components as used in folklore and the visual arts. Their method of derivation, however, is different. Whereas, in folklore, for example, a motif is "any one of the parts into which an item of folklore can be analyzed" (Thompson 1950, p. 753), in the method used here a motif is built up out of smaller movement units.

The final level of Tongan dance was based on ethno-semantic categories. These named categories, or genres, were found to be different combinations of structural elements from the lower three levels of dance organization and elements external to dance movement.

These four levels were found to account for all the relevant data in Tongan dance, but it must be emphasized that these levels of organization are specific to, and valid for, this system alone. Each dance tradition must be analyzed in terms of itself. It is conceivable that a dance tradition could have only two levels or five levels or more. The kinemic and morphokinemic levels, I suspect, are the most universal and can be derived for any movement system, but the higher levels of organization are more dependent on the external cultural system.

Though I have claimed that the movements presented are known to the Tongans themselves, I do not imply that I have presented what 124 goes on inside the natives' heads. The information was not derived 126 by asking hypothetical questions, and in many cases was not verbal 123 at all. Movements were derived mainly in terms of motion, the

verbalised level being only if movements were the same, different, or variants, and how they could be designated.

I have not presented all Tongans' view of dance, or one Tongan's view of dance, or even an agreement of several Tongans' view of dance. Any of these three would be impossible in Tonga. Very few Tongans have seen all dance types and even fewer can perform all of them. Those who know the most about dance are the people who live in Lapaha where all six types of dance are performed--but not by all the people. This method can be criticized on the the grounds that I have used so-called 'well-informed informants,' and it is true that I have. But this was necessary, as only individuals who were sufficiently familiar with a genre were able to tell me what dimensions were emically relevant within it.

The method does not disregard ambiguity, but emphasizes that ambiguity exists. There is variation in all the kinemes, and the boundaries between some are arbitrary. This is complicated by the fact that, especially for arm positions, what contrasts in one dance genre might not contrast in another dance genre.

The units were derived by observing what dancers did, asking them what they did, forming hypotheses about what was significant, and testing the hypotheses by performing. The elements that were claimed by Tongans to be insignificant, however, were not disregarded, but an attempt was made to present them without violating the Tongans' concepts about their dance as far as these could be ascertained,

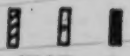
61: Kaeppler E-5 (1964-1967) 1977 OU9 Tonga OU9

APPENDIX C.

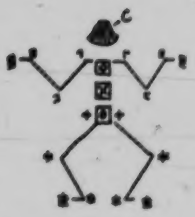
GLOSSARY OF LABANOTATION SYMBOLS

126

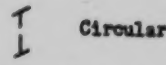
Direction is indicated by the shape of the symbol

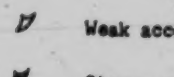


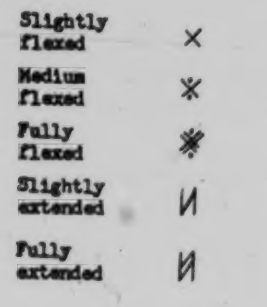
The three levels are distinguished by the different shading of the symbol.

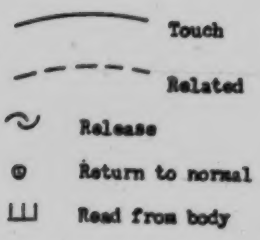


The Body Signs









126 Palm facing

Back of hand

Tips of fingers

 Heel of palm

 Little finger side of hand

 Spread

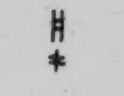
Touch of toes

Touch of ball of foot

Touch of whole foot

Limb of lower arm

Upper side of thigh

 Stage direction pins

On top of

Below

In front of

In back of

Repeat the same

Repeat to the other side.

69: Lātūkefu H,I-4,5 (1964-1965) 1968 OU9 Tonga OU9

morning the book which was supposed to be 100 miles away was there on the table for me to inspect.

There were many others who were reluctant to part with their precious stories and who only did so after they felt assured that I would not use any of them in my work without their approval and that everything which I used would be duly acknowledged. It is interesting to note that exactly the same conditions were put to me by the Australian descendants of early missionaries to Tonga, from whom I obtained family documents and written diaries.

The most rewarding part of my research in Tonga came more by accident than by design. On the morning of the New Year, 1965, I decided to pay a courtesy call on Her Majesty the late Queen Sālote. According to our customs, as a commoner I was not entitled to an audience; but being aware of Her Majesty's interest in my research, I decided to call and pay her my respects. The courtiers received me with enthusiasm, and everyone tried to help by attempting to tell Her Majesty of my call. However the Queen's personal nurse, perhaps annoyed by the courtiers' attempts to contact the Queen without consulting her, decided to exert her authority and told me that I could not see Her Majesty. I then returned home, a distance of some 11 miles from the capital. However one of the courtiers had decided to tell Queen Sālote about the episode, probably because she felt they had been humiliated by the royal nurse. Soon after, an Inspector of Police arrived bearing a letter to say that Her Majesty wanted to see me before her departure for New Zealand for medical treatment. At this audience, which lasted for about an hour, she invited me to join her in Auckland later that month, so that I could record her historical and traditional reminiscences. The news of my invitation by Her Majesty soon spread throughout Tonga, and from then on I had no difficulty in getting any information I wanted from the people.

In collecting material I mainly interviewed my informants. In these interviews I recorded the text offered either by taking notes or by tape recording. No questionnaire was used, in order not to interrupt the flow of the narrative, but I would sometimes ask questions about a particular event. The notes or tape recordings were read or played back to the informants to ensure that they were satisfied with them. With Her Majesty I took notes as well as tape recordings. After the interview I wrote up the material and gave it back to her for perusal and correction. In some cases I invited well informed people for a kava party where questions of traditions were raised and discussed and I noted the result. The advantage of this method was that the heated discussion that sometimes took place helped to revive

[viii]

114 Another narrative of this circumnavigation, is said to have been written by captain JAMES COOK of His Majesty's Royal Navy, under whose command it was performed. That account will be ornamented with a great variety of plates, representing views of the countries which we visited, portraits of the natives, figures of their boats, arms, and utensils, together with a number of particular charts of the new discoveries; and all these plates, engraved at the expence of the Board of Admiralty, are the joint property of captain Cook and my father.

At first sight it may seem superfluous to offer two relations of this voyage to the world; but when we consider them as narratives of interesting facts, it must be allowed that the latter will be placed in a stronger light, by being related by different persons. [126] Our occupations when in harbour were widely different; whilst captain Cook was employed in victualling or refitting the ship, I went in quest of the manifold objects which Nature had scattered throughout the land. Nothing is therefore more obvious, than that each of us may have caught many distinct incidents, and that our observations will frequently be foreign to each other. But above all, it is to be observed, that the same objects may have been seen in different points of view, and that the same fact may often have given rise to different ideas. Many circumstances familiar to the navigator, who has been bred on the rough element, strike [ix] the landman with novelty, and furnish entertainment to his readers. The seaman views many objects on shore with a retrospect to maritime affairs, whilst the other attends to their oeconomical uses. In short, the different

[430 cont.]

175 made of reeds, diagonally plaited in an elegant taste. A door,
351
417 which consisted of several boards, and was hung on a rope instead
175 of hinges, gave admittance into a plantation on each side. We
123 separated, in order to examine this beautiful country, and at
175 every step had reason to be well pleased with our discoveries. The
351 door was so contrived as to shut after us without any assistance,
137
[417] and the enclosures were over-run with climbers, and especially a bind-weed, having flowers of a beautiful sky-blue. The prospect now changed into an extensive garden, where we saw a number of tufted shaddock-trees, tall coco-palms, many bananas, and a few bread-fruit trees. In the midst of this spot the path led us to a dwelling-house, like that on the lawn, surrounded by a great variety
● [126] of shrubs in blossom, whose fragrance filled the air. We roamed through [431] these bushes, and collected a variety of plants which
175 we had never met with in the Society Isles. The inhabitants seemed
123 to be of a more active and industrious disposition than those of
609
[181] Taheitee, and instead of following us in great crouds wherever we
[171] went, left us entirely by ourselves, unless we entreated them to accompany us. In that case we could venture to go with our pockets open, unless we had nails in them, upon which they set so great a
175 value that they could not always resist the temptation. We passed
351 through more than ten adjacent plantations or gardens, separated
361 by enclosures, communicating with each other by means of the doors before mentioned. In each of them we commonly met with a house,
175 of which the inhabitants were absent. Their attention to separate
181 their property seemed to argue a higher degree of civilization than
[171] we had expected. Their arts, manufactures, and music were all more

[440 cont.]

175 by it in the most shocking manner; there was only a hole left in the
164 place of her nose; her cheeks were swelled up and continually
oozing out a purulent matter; and her eyes seemed ready to fall out
[439] of her head, being bloody and sore. These were some of the most
miserable objects I recollect ever to have seen; and yet they seemed
to be quite unconcerned about their misfortunes, traded as briskly
as any of the rest, and what was most nauseous, had provisions to
sell.

175 After dinner Dr. Sparrman remained on board with me, in order
122 to arrange our acquisitions of the morning, and my father again
[126] accompanied the captains to the shore, with a view to collect a fresh
supply. They returned about sunset, and my father gave the following
account of this excursion.

175 "At the landing-place the natives welcomed us with shouts as in
439 the morning, and the croud being as numerous as ever, the trade was
carried on very briskly, but provisions were scarce, and shaddocks in
particular not at all to be had, as the season was not yet sufficiently
175 advanced. Mr. Hodges, myself, and one servant, left the trading-place with
123 [441]two of the natives, whom we engaged to become our guides in
case of necessity, and walked up the hill to view the interior part
175 of the country. Our walk lay through a number of rich plantations or
311 gardens, enclosed as before mentioned with fences of reeds, or with
417
137 quick-hedges of the beautiful coral flower, (erythrina corallodendron.)
175 Beyond these we entered into a lane between two enclosures, and
311 observed bananas and yams planted in rows on both sides, with as much
487
[244] order and regularity as we employ in our agriculture. This lane
[245] opened into a fine extensive plain, covered with rich grasses. Having

[441 cont.]

175 crossed it, we met with a most delightful walk about a mile in
311
487 length, formed of four rows of coco-nut trees, which ended in another lane between plantations of great regularity surrounded by shaddocks and other trees. It led through a cultivated valley to a spot where several paths crossed each other or met in one.
175 Here we saw a fine lawn covered with a delicate green turf, and
351 surrounded by large shady trees on all sides. In one corner of it there was a house, which was empty at present, its inhabitants being
175 probably by the water's side. Mr. Hodges sat down to draw this
126 delightful spot. We breathed the most delicious air in the world,
175 fraught with odours which might have revived a dying man; the sea
[136] breeze played with our hair and gently cooled us; a number of small birds twittered on all sides, and many amorous doves cooed harmoniously in the deepest shade of [442] the tree under which we were
[137] seated. The tree was remarkable for its roots, which came out of the stem near eight feet above the ground, and for its pods of more than a yard long, and two or three inches broad. This secluded spot, so rich in the best productions of nature, where we sat solitary with no other human being besides our two natives, struck us with the idea of enchanted ground, which being the creation of our own gay fancy, is commonly adorned with all possible beauties at once. In fact, there could not have been a more desirable spot for a little place of retirement, according to the elegant imagination of Horace, if it had only been supplied with a crystal fountain or
[312] a little murmuring rill! But water is unfortunately the only blessing
[764] denied this charming little island. To the left of this spot we
[487] discovered a shady walk, that brought us to another grassy lawn, at

[452 cont.]

175 764 surrounded with the finest groves. That which I have here described, 114 was drawn by Mr. Hodges, and an exact representation of it is inserted 126 in captain Cook's own account of this voyage.

175 We continued our walk through the plantations, and met with 123 very few inhabitants, they being almost all gone towards the trading- 175 place. Those we saw passed by us, or continued their occupations 123 without stopping on our account. Neither curiosity, nor distrust 609 and jealousy excited them to prohibit our farther progress; on the contrary, they always spoke in a kind tone to us, which sufficiently 175 characterized their disposition. We looked into many of the houses 351 184 and found them empty, but always laid out with mats, and delightfully 352 123 situated among odoriferous shrubs. Sometimes they were separated 417 from the plantations by a little fence, through which a door, like those of Ea-oowhe, gave admittance, which could be shut on the inside. In that case only the area, which this fence enclosed around the hut, was planted with the odoriferous grove, which is so much in 175 request with the natives. A walk of three [453] miles brought us to 133 the eastern shore of the island, where it forms a deep angle, which Tasman called Maria Bay. Where we fell in with it, the ground sloped imperceptibly into a sandy beach; but as we walked along towards the north point, we found it rose perpendicularly, and in some places it was excavated and overhanging. It consisted, however, entirely of coral, which is a strong proof of some great change on our globe, as this rock can only be formed under water. Whether it was left bare by a gradual diminution of the sea, or perhaps by a more violent revolution which our earth may formerly have suffered, I shall not venture to determine. So much, however, may be assumed as a certainty,

[453 cont.]

175 that if we suppose a gradual diminution of the sea, at the rate
133 which they pretend to have observed in Sweden (14), the emersion of

14. See the Memoirs of the Swedish Academy of Sciences at Stockholm.

this island must be of so modern date, that it is matter of astonishment how it came to be covered with soil, herbage, and forests; so well stocked with inhabitants, and so regularly adorned as we really
175 found it. We picked up a quantity of shells at the foot of the steep
126 rock, where we sometimes waded in water to the knees upon a reef, on
175 account of the flood tide which was advancing. We likewise met with
439 several natives returning from the trading-place, who sold us a
[286] number of fish-hooks and ornaments, a fish-net made like our casting-nets, knit of very firm though slender threads, some [454] mats and
[292] pieces of cloth. We likewise purchased of them an apron, consisting
[531] of many wheels or stars of plaited coco-nut fibres, about three or
[286] four inches in diameter, cohering together by the projecting points, and ornamented with small red feathers and beads cut out of shells.
175 Finding that the water encreased too fast upon us, we looked out
123 for an ascent to the top of the rock, and having with some difficulty
241 found one, we re-entered the plantations, where we observed the weeds
175 rooted out with great care and laid in heaps to dry. After a long
123 walk, during which we missed our way, and engaged one of the natives to become our guide, we entered a long narrow lane between two fences, which led us directly to the Fayetooca or burying-place we had left before. Here we found captains Cook and Furneaux, and Mr. Hodges,
[565] with a great number of natives, seated on the fine lawn. They were in conversation with an old blear-eyed man, who had a good deal of weight among the rest of the people, and was always accompanied

[458 cont.]

175 [609] of the inhabitants, under the shade of the wild wood which lined the coast. There they lighted numerous fires, and were heard conversing 175 439 during the greatest part of the night. It seems their eagerness to continue the trade with us, would not permit them to return to their dwellings, which were probably situated in the remotest part of the island. Our goods were in great repute with them. Nails, which the natives commonly hung on a string round the neck, or stuck through the ear, were very current for fowls, and smaller ones 175 23 for bunches of bananas, and coco-nuts. Their fowls were the largest we had ever seen, and extremely well-tasted. Their plumage was commonly very glossy, and beautifully coloured with red and gold. 175 439 Our sailors bought numbers of them, in order to enjoy the barbarous amusement of seeing them fight. From the time of our leaving Huahine, 000 they had daily followed the cruel occupation of tormenting these poor birds, by trimming their wings, and incensing them against each other. They [459] had so well succeeded with those of Huahine, that some of them fought with the most desperate fury of true gamecocks; but they were well disappointed with those which they purchased at Tonga-Tabboo, and as they could not make them fight, they were forced to eat them in revenge.

175 565 [291] Early the next morning, A the captain's friend Attahha or Attagha (see p. 447.) B came on board in one of the first canoes, and breakfasted with us. He was drest in mats, one of which, on account of the coolness of 175 565 114 [126] the morning, he had drawn over his shoulders. He resembled all other uncivilized people in the circumstance that his attention could not be fixed to one object for any space of time, and it was difficult to prevail on him to sit still, whilst Mr. Hodges drew his portrait. An

A [5 October--Analyst.] B [i.e. p. 37-8 of HRAF manuscript--Analyst.]

[459 cont.]

175 An excellent print, executed by Mr. Sherwin, has been made from his drawing,
565
114 which expresses the countenance of this chief, and the mild character
[181] of the whole nation, better than any description. It is inserted in
[201]
[431] captain Cook's account of this voyage, and represents Attahha in the action of thanksgiving, laying a nail on his head, which he had
175 received as a present. After breakfast, the captains and my father
565 prepared to return to the shore with him; but just as he was going
152 out of the cabin, he happened to see a Taheitian dog running about the
231 deck; at this sight he could not conceal his joy, but clapped his hands on his breast, and turning to the captain, repeated the word goorree(15)

[197] 15. Ooree signifies a dog at Taheitee; and ghoooree at New Zeeland.

[431] [460] near twenty times. We were much surprised to hear that he knew the name of an animal which did not exist in his country, and made him a present of one of each sex, with which he went on shore in an extasy of
175 joy. That the name of dogs should be familiar to a people, who are not
231 possessed of them, seems to prove either that this knowledge has been propagated by tradition from their ancestors, who migrated hither from other islands, and from the continent; or that they have had dogs upon their island, of which the race, by some accident, is become extinct; or lastly, that they still have an intercourse with other islands where these animals exist.

126 I remained on board all this day, to arrange the collection of plants and birds which we had made upon our first excursion, and which
175 was far from despicable, considering the small size of the island. The
501 natives continued to croud about our vessels in a number of canoes,
[481] whilst many were swimming to and from the shore, who were probably not rich enough to possess a canoe. These embarkations were of different

[478 cont.]

175 for water, and the master had been sent to the eastward to survey
122
312 Maria Bay, and the low isles which shelter that harbour. The situation
175 of these islands he found very exactly represented in the charts
136 of the ever accurate Tasman, and on one of them where he landed,
he saw an astonishing number of speckled water-snakes, with flat
tails, which are harmless, and distinguished in the system of
175 Linnaeus, by the name of colubri laticaudati. In our branch we
126 had not been unsuccessful, this little island having afforded us
137 several new plants, among which was a new species of jesuit's bark,
or cinchona, [479] of which the bitter bark may perhaps be equally
175 efficacious with that of Peru. We also collected several birds
23 unknown before, and purchased some live species, particularly of
[126]
[439] the parrot and pigeon tribe, of the natives, who seem to be very
[136] expert fowlers. But it did not appear to us, that the pigeons,
[554]
[171] which many carried perched on crooked sticks, were marks of
distinction, though Schouten at Horne Island where the same custom
175 prevails, is of that opinion (25). In the last boat which

565 25. See Mr. Dalrymple's Historical Collection,
431 vol. II. p. 46.

609 had brought our people on board in the evening, the Latoo or king
had sent a great quantity of vegetables, together with a whole hog
roasted, or dressed under ground, as a present to the captain. In
the morning therefore, we embarked early in the pinnace, and rowed
[152] to the shore to make a present in return. We found the Latoo sitting
at a little distance from the beach; and captain Cook gave him
a shirt, a saw, a hatchet, a brass kettle, and several articles
of less moment, all which he received with sullen gravity;
this deportment he never varied, except once, when he was seen to
smile as he conversed with Attagha.

[178 cont.]

609 father remained sitting near Mr. Patton, with that unconcern which
175 a noble and virtuous conduct inspires. She enquired for the name of her friend; he told her that which the Taheitians had given him, Pateenee; and she immediately adopted it, changing it into Patseenee. On stepping into the boat, he gave her father and her a few presents, which he borrowed from the crew, and with these they returned to their groves highly pleased. When Mr. Patton [179] came on board, he acquainted captain Cook with the danger to which he had been exposed; but though he had only followed the example of many of his shipmates, by reposing confidence in the natives, yet the loss of his fowling-piece was considered as a proper punishment for his imprudence. The afternoon was
[126] spent in different rambles on shore. My father, with a single sailor, walked over a considerable part of the island, without the least molestation from the inhabitants, and brought on board a number of new plants.
[674] No other complaints arose against the natives this day, except some petty thefts, at which they were expert like their brethren of Tonga-Tabboo and the Society Islands.

122 The next morning [June 28] early we discovered several islands to the N.W. of us, which a haze in that quarter had hitherto screened from
193 our sight. The two westermost were high, one peaked, but the other
175 more extensive. A thick smoke arose from the last, on which, during the night, we had observed a fire. The natives who came on board acquainted us that this fire was constant, so that we concluded it to
103 proceed from a volcano. They called this island Tofooa (5), and the
193
175

5. Tasman calls it Ama-Tofoa in his map. Ama or kama probably signfies a mountain.

peak close by it e-Ghao (6). To the northward of these two we discerned

[179 cont.]

103 6. Tasman calls it Kaybay in his map.

193 thirteen low islands, each of which the natives named to us.

175

[180] We hastened ashore after breakfast, to resume our enquiries.

122 We soon left the beach, where the natives were again assembled in great

197 numbers of both sexes. A most beautiful kind of lily (crinum asiaticum)

126 was the first plant which we met with and several others, not less valuable,

175 were collected soon after. We came to the watering-place, which was a

312 pond about a hundred or a hundred and fifty yards long, and fifty broad;

175 it contained stagnant water which was somewhat tainted with a brackish taste, and might perhaps have subterraneous communications with the

648 salt lagoon, which in one place adjoined to it. Lieutenant Clerke, who

175 superintended the waters, told us that his musket had been nimbly snatched

197 away by one of the natives, who instantly ran off with it. We advanced

175 to the salt lagoon, and botanized, among the spacious man-groves which

[126] surrounded it: These trees occupy a vast space of ground, and grow more and more intricate by age. Their seeds do not drop off, but shoot down from the top of the tree, till they reach the ground, where they take root,

648 and spread new branches. Whilst we were here, we heard three great guns

175 fired; but the sound being broken by many intervening objects, we suspected that they were only muskets overcharged as usual, by some young gentlemen

609 on a shooting party. We left the lake soon after, and passed through a

175 plantation, where the natives bowed to us very kindly, and invited us to

648 sit down amongst them. [181] We were desirous of making the most of our

721 time, and therefore soon left them, and returned to the fresh-water pond.

175 Having fired a musket at some wild-ducks, which were in great plenty, we were called to by Mr. Gilbert, the master, who told us that a volley of small arms, and three cannon had been fired to alarm and bring us back,

[185 cont.]

501 tranverse platform of planks, in the midst of which they had erected
175 a hut, where they placed their goods, their arms, and utensils, and where they passed great part of their time. There were likewise holes, which gave admittance into the body of each canoe. Their masts were stout poles which could be struck at pleasure, and their sails were very large and triangular, but not very proper to sail by the wind.
[283] All their cordage was excellent, and they had also contrived a very good ground tackle, consisting of a strong rope with large stones at the end, by means of which they came to an anchor.

122 We went on shore again after dinner, as captain Cook proposed
126 leaving this island the next day. We passed through several fields and wild shrubberies, and collected a number of valuable plants.
[439] We also made a purchase of several arms, such as clubs, and spears, and of some utensils, viz. small stools, large wooden dishes and bowls, in which the people prepare their victuals, and some earthern pots
719 which seemed to have been long in use. The great abundance of their
175 arms, does not agree with their good-nature and hospitable disposition,
[181] unless they quarrel with their next neighbours, like the people of
[531] Taheitee and the Society Islands. But they seemed to have spent too much time [186] in ornamenting their clubs, to have frequent occasion to use them.

122 At day break the next morning [June 29] we unmoored and set sail, standing towards the island of Tofooa, on which we had again observed
439 the volcano burning during night. A whole fleet of canoes followed us
175 several miles, trading with a variety of articles, particularly their dresses, utensils, and ornaments. Some of them likewise brought fish of different sorts, which we had found very well tasted.

[193 cont.]

122 announced to us that the island was inhabited.

175 The next morning [July 3] we bore down upon it again, and came
177 round its east end. It appeared to be about seven miles long, and
175 had two small hills of very gentle ascent, [194] wholly covered with
177 woods, like the rest of the island. One end sloped into a flat point,
193 on which we observed fine groves of coco-palms, and fruit-trees, together with houses in their shade. A fine sandy beach surrounded the shore, and at the distance of half a mile, a coral reef encompassed the east side of the island, which at the points projected near two miles from
175 the shore. On this reef we soon perceived five blackish-brown men,
177 with clubs in their hands, looking at us very attentively. We hoisted a
609 boat out, and sent the master to sound an opening between the reefs which we saw before us. He went on through the entrance towards the shore, where we observed upwards of thirty inhabitants sitting. Amongst them ten or twelve were armed with spears; but as soon as our boat came near, they hauled a canoe into the woods, which had brought their five men to and from the reef, and all ran off when the master landed.
[193] He laid some nails, a knife, and few medals on the sandy beach, and returned on board, to acquaint the captain that there was no bottom in
175 the entrance of the reef, and not sufficient depth within it. He had
177 observed a dozen or more large turtles swimming in the harbour; but
136 being destitute of harpoons, or other instruments, could not strike any
122 of them. Our boat was hoisted in again, and the hopes of botanizing
175 on this island were entirely frustrated. We continued standing along
177 its reef, on which we observed some large single rocks of coral, near
[126] fifteen feet above the [195] surface of the water, narrow at the base,
[193] and spreading out at the top. Whether an earthquake had raised them so

262 Yams are the other major prestige food and Whitcombe (1930) lists
[137] 121 varieties distinguished by Tongans. Most of these varieties are
[126] Dioscorea alata and a few varieties are Dioscorea esculenta. In the village of Puke I collected the names of 40 varieties. Yam varieties are distinguished and ranked by the criteria of size, shape, color, firmness, and growing patterns. The yams most prized are white, large, and cylindrical in shape.

574 Feasts usually take place in a house or under a constructed shade.
262 The food is placed on plaited coconut frond platters (pola) and set down
574 end-to-end on the ground. The platter with the largest pig or pigs and
262 the best yams is placed in front of the postion occupied by the highest
554 ranking person present. The further down the line of food from that position, the less prestigious the food so that at the end opposite the highest ranking guests, there may be only sweet potatoes and fish.

The quality of a feast is described by the size and number of pigs and yams served, but the quantity of a feast is described by the number of platters utilized. Ranking at a feast is based on societal rank, not kinship rank. For instance, if there is a noble present he will be given the position at the head of the line of platters and then all others will form a line down the sides with perhaps ministers and older men sitting closest to the noble, moving down to the youngest man of no position. After these people have finished eating, a second group, usually consisting of women and children, will take their places.

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

Presumably, the unintentional introduction of certain weedy species occurred at the same time. A good many cultivated species, together with many weeds, owe their presence to the visits of European ships, starting early in the seventeenth century and continuing with increasing frequency to the present time. Some of these alien species find optimum conditions for growth and multiplication, and have undoubtedly played a part in limiting or even exterminating some endemics or indigenous species through aggressiveness. A high percentage of the usual strand and weed species includes those frequently found on other Pacific islands and elsewhere in tropical countries.

There is little fresh water available other than that impounded in tanks from rainfall. Aside from occasional small localized areas, the low coral islands present a monotonous repetition of plantation weeds and fallow-resting plantations of second-growth "bush." The dominant crop is coconuts, and large areas have been cleared for the extensive plantations found on most of the islands. At present, the high market value of copra makes it the most important source of income for the islanders. The second most important export crop is bananas, of which 50,000 or more cases are shipped annually to New Zealand. The more rugged topography of 'Eua, and to a somewhat lesser extent of Vava'u, prevents the cultivation of some parts of the islands. As a consequence, there are more opportunities on these islands for the survival of native species. Some of the islands, especially 'Eua and Kao, still have significant timbered areas with some of the tree species reaching a diameter of more than a meter and offering a source of timber. Lumbering operations are being developed by the government on 'Eua which, together with the fact that more and more of the forested land is being cleared for new plantations, threaten to reduce or eliminate many of the native species. Too, this has caused a soil erosion problem on some of the slopes. Lumbering operations on the volcanic islands of Late, Tofua, Kao, and Tafahi, because of the present lack of harbor facilities, are all but impossible. It seems improbable, therefore, that much timber will be cut on those islands in the immediate future, and it is on those islands that many of the native species will have the best chance of survival. However, with any marked increase in population, it will eventually become necessary to colonize and develop such islands.

The climate of Tonga is pleasant during most of the year. The annual temperature ranges from a low of around 75° F. in July and August to a high of 85° to 90° F. from January to March. Slightly higher or lower temperatures are not infrequent. The humidity is comparatively high, ranging from about 88° in the warmer months to a low of around 72° in the winter period. The average mean rainfall is about 80 to 90 inches, with the wettest season during the first six months of the year.

The collections upon which this report is based were made on the islands of Tongatapu, 'Eua, Nomuka, Lifuka, Kao, Vava'u and Niuafo'ou between February and June 1953. Projected visits to 'Ata, Tofua, and Late were aban-

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

126 [101] doned because of a combination of unfavorable weather and lack of transportation. But I predict that collections made on those islands, so far little-known botanically, where land utilization has been slight will increase to some extent the list of species known to grow in Tonga.

000 A number of botanists have visited Tonga in the past and made collections ranging from a few numbers to several hundred. Among the first collectors known to have reached the islands were Banks, Solander, the Forsters, and Nelson who accompanied Captain Cook on his voyages in the latter part of the eighteenth century. Among others who have collected there subsequently may be mentioned George Barclay, James Macrae, Captain W. F. Beechey, Alexander Mathews, Sir Edward Home, W. H. Harvey, Dr. E. Graeffe, J. N. Moseley, Charles Wilkes of the United States Exploring Expedition, T. B. Cartwright, J. J. Lister, and C. S. Crosby. With the exception of the collections made by Moseley on Tongatapu, Lister on 'Eua, and Crosby on Vava'u, most were relatively small and most were obtained during the nineteenth century. In 1926, H. E. Parks and W. A. Setchell collected on Tongatapu and 'Eua, and in 1951 Dr. Hans Hürlimann spent several weeks making collections, principally on Tongatapu, 'Eua, Tafahi, and Niuatoputapu.

113 Two comprehensive reports have been made on the flora of Tonga: (1) The flora of the Tonga or Friendly Islands, . . ., by W. B. Hemsley in the Journal of the Linnaean Society (Botany 30: 158-217, 1894), which also included some species from islands outside the Tongan group, and (2) The flora of Vava'u, one of the Tonga Islands, by I. H. Burkill in the Journal of the Linnaean Society (Botany 35: 20-65, 1901). In addition, occasional references to Tongan species are found in reports on the flora of nearby islands or on the Pacific area in general.

128 The collections cited by Hemsley and by Burkill in their reports, unless for some reason questioned, have been included in the list of citations for the different species. These specimens have not been studied and are only provisionally included. The Hemsley and Burkill publications when referred to with respect to synonymy are indicated as Hemsley's and as Burkill's lists. The specimens collected by Dr. Hürlimann which have been examined are also cited. Altitudes given in connection with the citation of some of the collections were estimated or obtained from map records.

126 137 I made no attempt to procure extensive collections of the lower plants, and only the most conspicuous and abundant species were taken. The small representation of the lower groups should, therefore, not be interpreted as an 137 indication of their scarcity. Fleshy fungi, especially, appeared to be quite abundant in the moist forested areas. Parasitic fungi such as leafspots and rusts, on the contrary, were very scarce. In none of the regions visited were bryophytes conspicuously abundant, as is frequently true in tropical rain-forest areas. Such collections of the lower cryptogams as were made are included in this report as a matter of record.

76: Yuncker N-4,5 (1953) 1959 OU9 Tonga OU9

The conspicuous and apparently well-established cultigens, as well as introduced weedy species, were either collected or noted and are, for the most part, included, as I believe that such information is of value in helping formulate a proper concept of the flora of any region. So far as I know, many of these introduced or migrant species are covered in no previous report on the Tongan flora.

In this work, 49 lower cryptogams, 71 pteridophytes, and 630 spermatophytes are recognized, making a total of 750 species and varieties.

The late Sir Peter Buck, then Director of Bishop Museum, originally suggested the desirability of a botanical survey of Tonga and assisted in the preliminary plans. The government of Tonga was interested in the project and, through Prince Tungi, rendered aid in every way possible. Mr. Willy Straatmans, Director of the Department of Agriculture, was most helpful in arranging for transportation between the islands, for living quarters in government rest houses, and for local transportation by land-rover on the islands of Tongatapu and Vava'u.

I was fortunate in obtaining the assistance of W. Toluta'u Ha'angana, a member of the Tongan department of agriculture staff, who served as chief assistant for the entire period of the work. "Tolu" proved to be a most intelligent and cooperative assistant at all times, and his knowledge of Tongan plants was considerable. Most of the local names given in this report were supplied by him, as well as the information about the uses made of the plants by the Tongan people. On many occasions his explanation for our presence on plantations or other private property of suspicious owners unable to understand English smoothed the way and avoided trouble. His agility in procuring drinking coconuts was likewise much appreciated.

Tongans do not always distinguish between closely related plants and sometimes apply the same name to more than one species. Also, occasionally the same name is given to widely different species, leading one to suspect that some names are erroneous. Such presumed errors were checked as far as possible and, if obviously wrong, eliminated. Where two or more names have been supplied for a given species, the one believed to be more commonly used is listed first.

In the identification of the collections I am greatly indebted to a number of specialists. The fleshy fungi were identified by Dr. J. A. Stevenson; the liverworts, by Dr. Margaret Fulford; the lichens, by Dr. Carroll W. Dodge; the mosses, by Mr. E. B. Bartram, who also furnished the description of the new species; the description of the new *Podocarpus*, by Mrs. Netta Gray; the pteridophytes (excepting *Selaginella*), by Mr. C. V. Morton; *Selaginella*, by Mr. A. H. G. Alston; the grasses, by Dr. J. R. Swallen; the orchids, by Mr. Charles Schweinfurth; *Ficus*, by Mr. W. J. H. Corner; *Pipturus* and *Santalum*, by Dr. Carl Skottsberg; certain members of the Apocynaceae, by

115 Tolu Ha'angana
(Agricultural Officer. Assistant to T. G. Yuncker when he was collecting in Tonga.) Field work, discussions, medical uses of plants.

Preben Kauffmann (Tavi)
(Expatriate from Denmark, 17 years in Tonga, friend of King Tupou IV and integral member of his community. Vegetarian.) Plants and medical uses.

Latu Toili
(Driver for Medical Department.) Plants and medical uses.

Te'ekiu Village:

Amato Uia
(A renowned practitioner with 45 years experience.) Medical uses of plants and discussions.

128 A total of 91 remedies were recorded. Included in these remedies were 59 different species of plants used by at least two different informants. References to an additional 128 17 species of reputed value but not met with 127 in the field are included from the literature (29).

124 The general procedure for gathering data consisted of interviewing informants in their villages. With the aid of an interpreter, data were gathered in four categories. Tongan name of the plant, the part utilized in preparing the medicine, the illness, and the preparation, dosage, and administration. 124 Where the informant was agreeable, a walk through the village or surrounding "bush" 126 usually allowed collection of described plant specimens. In the few cases where the informant was either too busy or too infirm to accompany the investigator, the described plants were collected under the guidance of a direct relative or friend familiar with the habitat.

In some cases it was necessary to collect the described species with the aid of an agricultural officer, going only by Tongan plant names. Although this method is open [824] to doubt in other regions of the Pacific because of variations in dialects, the Tongan language is constant as far as plant names are concerned. There are variations on descriptive names, but all base names of plants encountered were identical from one informant to another. This was verified through repeated checking.

[p. 435-B]

78: Weiner N-4,5 (1969) 1972
OU9 Tonga OU9

Further reassurance regarding the consistency of plant names came while I was drying plant material later to be used as crude drug samples. As individual trays of desiccated leaves and bark were removed from copra driers, Tongan workers who had inquisitively gathered would attempt to call out the identity of the dried contents before the attached identifications were exposed. Most men were able to identify the plant names correctly, relying solely on their ability to interpret the scents and shapes of the desiccated samples.

V. Enumeration of Tongan Medicinal Plants

Specimens of 59 species of plants were collected on Tongatapu Island. The plants were identified by using Yuncker (32) and also by a study of specimens available at the Herbarium of the Bishop Museum. Final determinations were established by Dr. A. C. Smith of the University of Hawaii. Voucher specimens are on deposit at the Bishop Museum.

Following is an enumeration of plants utilized as medicines by the Tongan people. This list includes my own observations as well as those reported in the literature. Families, genera, and species are arranged alphabetically. Tongan vernacular names and geographical distributions of each species, as given by Yuncker (32), are included. The medicinal applications of each species in some other regions of the Pacific are enumerated to show their popularity in use.

AMARANTHACEAE
(Amaranth Family)

ACHYRANTHES ASPERA L.

tamatama

This pantropical species is common throughout the archipelago.

In Tahiti the roots are used in treating mouth sores, toothache, and syphilitic sores (19). It is reported that the plant is employed in medicines in Niue (31). In the Philippines the leaves and roots are valued as diuretics and the sap for treating cataracts (21).

In Tonga the leaves are used to tie wounds after circumcision (32), and after

79: Lātūkefu H,I, M-4,5 (1964-1965) 1974
(1822-1875)
OU9 Tonga OU9

to Ian Diamond, former archivist of the Fiji Archives, and many others in various institutions in Australia, New Zealand and Fiji.

I must acknowledge my indebtedness to the General Secretary of the Methodist Overseas Mission, the Reverend C. F. Gribble, O.B.E., and the Reverend E. V. Newman, who permitted the use of the Methodist Overseas Mission Archives; to Dr D. Williams of Trinity College, Auckland, for the use of the College archives; to the Reverend J. B. H. Robson, for the use of Methodist archives in Suva; to the Reverend G. Harris, then President of the Wesleyan Church in Tonga and to Bishop J. H. M. Rodgers, of the Roman Catholic Church, for the use of their respective archives at Nuku'alofa, and also to Father C. P. Butler and Father Mingam of the Marist Fathers' headquarters at Hunters Hill, Sydney, for the use of the monastery's archives, their useful criticisms of the sections on the Roman Catholic mission, and the translation of letters from the French.

My attention was initially drawn to the subject of this book by the late Reverend R. G. Page, who had been a missionary in Tonga for thirty-eight years. To this remarkable and unassuming man I owe a tremendous debt of gratitude for his sound advice, encouragement and personal interest in my work. The valuable historical books and records which he had wisely and carefully collected for many years, and which have been generously given to me by his son Roger and daughter-in-law Mary, have been of invaluable help to this work. It is my deep regret that he did not live to see the completion of this book, which he had always wished.

I wish to express my sincere appreciation of the valuable assistance given to me by Dr A. H. Wood and the late Dr E. E. V. Collocott, both ex-missionaries and authorities on the history of Tonga. Thanks are also due to Miss Gwenyth L. Davies, of Adelaide, Mrs Halliday of West Wyalong, Miss Oldmeadow of Melbourne, Miss Crosby of Sydney, the Reverend H. K. Moulton of London and other descendants of the Wesleyan missionaries, who gave me access to the journals and letters of their forebears who had served in Tonga during the period of this study; these documents proved to be invaluable sources of information.

This study has been enriched by the oral traditions collected

79: Lātūkefu H,I,M-4,5 (1964-1965) 1974
(1822-1875)
OU9 Tonga OU9

from various informants in Tonga during my field trip there from November 1964 to February 1965. I am deeply indebted to the Hon. Ve'ehala, Keeper of the Palace Records and Secretary of the Traditional Committee, for the wealth of information he kindly gave me in answer to my inquiries. Thanks are also due to the following informants: Tu'i'āfitu of Makave, Vava'u; the late Fe'iloakitau Kaho and the late Sione Filipe Tongilava of Kolofo'ou; the late Molitoni Fīnau of Nukunuku, 'Uhatafe of Mu'a, Siola'ā Soakai of Hihifo, Ha'apai, and many others, particularly my father, the late Siosiua 'Alopī Lātūkefu of Kolovai, who so generously gave of their time.

To Dr W. N. Gunson of the Department of Pacific History, Australian National University, I owe an immeasurable debt, and it is impossible to convey fully the extent of his patient guidance and encouragement throughout the preparation of my thesis which formed the basis of this book. I also wish to acknowledge my indebtedness to the late Professor J. W. Davidson for the generous support given to me by his Department and for his invaluable criticisms of certain aspects of the manuscripts; to Mr Harry Maude, Dr Francis West, Dr Dorothy Shineberg and Dr Deryck Scarr, who at all times showed their readiness to discuss and criticise this work; to Dr Alaric Maude and Dr Noel Rutherford, both students of Tongan geography and history, who read portions of this manuscript and offered valuable suggestions. Thanks are also due to Professor D. J. N. Denoon of the History Department, University of Papua New Guinea, who has read the whole manuscript and made very useful comments.

I would also like to express my thanks to Mrs Coral Wong and Mrs Joan Stephenson of Port Moresby, who carried out the task of typing and preparing this manuscript; and to my wife Ruth for her devoted, untiring assistance and moral support during the preparation of this book. Thanks also to Lotte and 'Alopī who had to put up with their parents' preoccupation with this work.

Lastly, with deep gratitude and affection, I wish to express my great indebtedness to Her Majesty, the late Queen Sālote Tupou of Tonga, for her gracious interest and invaluable help in this work. I was deeply privileged and greatly honoured by an invitation, which she extended to me, to spend four weeks with her

81: Bott E,P-4,5 (no date) 1972 009 Tonga 009

the differences between one type of kava ceremony and another. I think this process of exploration is analogous to the use of patients' associations to dreams.

In the course of talking around the ceremony several informants told me the myth of the origin of kava, which proved to be a useful lead. I recorded two versions of the myth and there are others in the literature (Gifford, 1924, pp. 71–5). Their points of similarity and difference helped to clarify the central theme of the myth but I only have time for one version, which is the one recorded by the late Queen Sālote.

THE MYTH OF THE ORIGIN OF KAVA

One day the King of Tonga went fishing with a friend. They did not catch anything, and as they were tired and hungry they called in at the little island of 'Eueiki to get something to eat. At that time there was only one couple living on the island and they had one child, a daughter, whose name was Kava'onau. (In some versions the name is abbreviated to 'Kava'.) She had leprosy. It was a time of famine and the only food the couple had left was a large kape plant (Alocasia macrorrhiza) which stood near the beach. When the King landed he sat down to rest against this plant. When the couple realized who their guest was they set about making an earth oven, but when they came to get their sole remaining food plant they could not use it because the King was leaning on it. The King's friend saw the couple hit something in their house and bring it out to be baked in the earth oven. He saw that they had killed their daughter because they had nothing else to give their King. The King's friend told the King what the couple had done. The King was deeply moved by their sacrifice. He rose up immediately and returned to the main island, telling the couple to bury their child properly.

Two plants grew from the grave, one from the head and one from the foot. One day the couple saw a mouse bite the

85: Raven-Hart G,R-3 (no date) 1955 OU9 Tonga OU9
Vava'u

form: F major, 6/8, C:(F):E:D:–:A | C:–:–:–:–:x | C:C:C:D:–:D | E:–:–:–:–:x | C:D:D:C:–:A | A:G:A:B:–:– | F:𝄐F:A:–:G | F:–:–:–:–:–. Here it will be found by reference to the original that the first four bars are stolen from the tenor (which of course goes off on a course of its own rather than accept unison with the sopranos), except that in the first bar an A replaces the accidental B-flat of the original (section 3 above). Then the next two bars are entirely new; and for the last two bars the original soprano part reappears.] 171

The "Trinesian" aptitude for instantly extemporizing parts to a newly-heard tune has been remarked on by many writers (e.g. King for Fiji, who tried them with classical melodies). Caillot, however, writes for Tahiti that although "harmony is innate in them" and "they never sing except in chorus," yet "they have known harmony only since they have been in contact with civilization," which, if true, is more than odd.

(6) A particularly interesting case is that of Burgoyne's "Spanish Chant," since not only was the accepted variant fully noted, but a sub-variant was actually heard in process of development. The original is given as example "C": no metronome-mark is shown, but the probable speed is in the order of 80 semibreves to the minute, at the most. 533 177

Tonga sings it about three times as fast, and changes to a dotted rhythm in the first bar of each phrase, giving the really exciting tune of example "D." It will be noted that bars 25 to 32 exactly repeat bars 1 to 8, thus avoiding the accidental of bar 29 in the original (sections 2 and 3 above). The use by the bass in bars 17 to 24 of the opening melody is very attractive; the alto part in these bars exemplifies the fondness for following the melody a third below, as mentioned later (section 13). Some of the harmonies may seem peculiar, but were transcribed from the numerical sol-fa manuscript score lent by the choirmaster, and can therefore be guaranteed. 533 177 [126]

After this had been recorded, a boy was heard whistling the melody. Bar 7 did not please him; after repeatedly whistling the first six bars he hit on EDCB for the seventh, and enthusiastically adopted it; and after a few repetitions altered (as was to be expected) the B of bar 6 to a D, better to lead into the run. This run suggested that something similar should occur in the next phrase, and he tried, for bar 19, the run DCBA. This was at once abandoned, and EDCB and FEDC were tried, in both cases with the C of bar 18 changed to a D as a passing-note. The attractive alternative of putting this FEDC run into bar 20 was also tried, with the C of bar 18 becoming an E to lead to it; but this did not find favour. When he broke off at a call from his house he seemed to have settled down to the form: A major, 4/4, A:–:–:A | *g*:–:A:–: | *f*:–:A:–: | 𝄐:–:–:– | C:–:A:–: | D:–:D:–: | E:D:C:B | A:–:–:– | repeat these eight bars, then C:–:–:C | B:–:D:– | F:E:D:C | B:–:–:– | C:–:–:C | B:–:D:– | F:E:D:C | B:–:–:– | and finally again repeat the first eight bars.

(7) Examples were also collected from secular songs (though the demarcation is not strict, "Geneviève," "Annie Laurie," and "Loch Lomond" all ranking as hymn-tunes). A singing competition for schools set "Auld Lang Syne" as one of

125 and the gardens of each individual farmer are generally
423 confined to the area of single bush and town allotments.
[241]

The sampling survey of the bush allotments was based on the total of 5,652 allotments on the island in 1971, com-
125 prising about 45,214 acres (18,085 hectares). A map of these allotments (Figure 1)provided an excellent base from which a random sample of 101 allotments was selected (Figure 2) using a random numbers table. Each of the 101 'api 'uta was visited and an inventory of relevant agricultural phenomena was taken.

As a result of preliminary study, an inventory scheme was generated (see Appendix A)[A] which took into account 263 different types of agricultural phenomena, which were classified as to their number, area, condition, etc. depending upon the nature of the particular phenomenon.

125 The following procedures were used to survey the 101
126 sample bush allotments ('api uta): 1) accurate maps for each sample allotment were drawn using survey books at the Land and Survey Department; 2) using these maps in the field, the boundary markers were located; 3) using pacing techniques, the acreages for all major crops and the location of all other trees and plants were plotted; 4) acreages of fallow ground were mapped and categorized with respect to the stage of regrowth; 5) data on the occurrence of other agricultural phenomena and practices were recorded; 6) upon completion of work in the field

A [See Category 125, pp. 350-358--Analyst.]

[TEXT CONTINUED ON PAGE 131]

125 each day, the survey data were analysed, and codified
126 answers for each of the 263 survey questions were entered
125 onto standardized sheets. The volume and details of the information required for each sample allotment precluded the selection of a larger sample size. Moreover, after sampling appriximately 80 of the 101 bush allotments, very few, if any new crops, agricultural practices, or other unexpected agricultural phenomena were encountered.

The survey of the town allotments ('api kolo) presented different problems. There were no reliable maps that could be used as a sampling basis for all 59 towns and villages on Tongatapu (Figure 3). Also, a random sample taken from the entire universe of town allotments on Tongatapu would have used transportation time needed for the survey.

To overcome these problems, a stratified sample was selected of six towns and villages representing a range of population sizes and geographical locations. There were Kolomotu'a, Kolofo'ou, and Ma'ufanga, which comprise the capital city, Nuku'alofa; Tatakamotonga, which is part of Mu'a in east-central Tongatapu; Fua'amotu in the southeast; 'Utulau in the southwest; Niutoua in the northeast; and, Fo'ui and Ha'avakatolo in the northwest.

From each of these settlements a random sample of town allotments was inventoried. At the beginning of the

125 survey, one out of every ten occupied town allotments was sampled. However, this sample size was later reduced to one out of fifteen. The total number of town allotments sampled was 172. For each of these, an inventory of 241 different types of information on the nature of the door-yard gardens and other agricultural phenomena was carried [126] out. The data for each town allotment were recorded on standardized data sheets (Appendix B).[A]

In addition, a detailed questionnaire was used to gather data concerning Tongan views of the agricultural system (Appendix C).[B] The questionnaire was administered to 150 households in 9 settlements in four districts: Nuku'alofa, Vahe Hahake (Eastern District), Vahe Loto (Central District), and Vahe Hihifo (Western District) (Figure 4). A proportion of the sample was allotted to each district on the basis of estimated 1972 population. Within each district a stratified sample of villages was selected on the basis of size and geographical location: Kolomotu'a, Kolofo'ou, and Ma'ufanga in the Nuku'alofa District; Kolovai in the Hihifo District; Ha'ateiho and Houma in the Vaheloto District; and Haveluliku, Fatumu, and Kolonga in the Hahake District. (See Figure 3: "Major Towns and Villages of Tongatapu"). From complete lists of households for each village, individual households were [114] selected using a random numbers table (Table 1). A group of eight senior high school students were trained to help

[A] [See Category 125, pp. 359-360--Analyst.]
[B] [See Category 125, pp. 361-374--Analyst.]

[TEXT CONTINUED ON PAGE 17]

125 [114] administer the questionnaire.

Table 1. Number of questionnaires administered to representative village in each district.

District	Village	No. of Questionnaires
Nuku'alofa	Kolomotu'a	23
	Kolofo'ou	13
	Ma'ufanga	8
Hihifo	Kolovai	18
Vaheloto	Ha'ateiho	22
	Houma	21
Hahake	Haveluliku	7
	Fatumu	17
	Kolonga	21
TOTAL		150

126 [124] Throughout the year, plant specimens were collected from cultivated and natural vegetation. Folk names were obtained from Tongan informants, especially at the Talamahu Market where a consensus of opinion on the "correct" Tongan name could be reached. These identifications in Tongan were then cross-referenced in Yuncker's Plants of Tonga (1959) for tentative scientific names. Research was also carried out in the Agriculture Department's Herbarium, which contains specimens collected by H. Huĕrlimann (1951), T.G. Yuncker (1953), and E. Lawrence (1959). Fresh specimens collected in the field were compared with this collection to verify their identity. In addition, 193 herbarium specimens were collected and posted to California where

126 128

126
128 they were subsequently identified with the help of R.G. Thorne of the Rancho Santa Ana Botanic Garden of Claremont College. Suitable specimens were deposited in the Rancho Santa Ana herbarium.

241 comparison with other portions of Tongatapu, however, this
311 area has a relatively uniform secondary regrowth dominated
137 by Panicum maximum (saafa) and other grasses and relatively
125 few important tree species. For Tongatapu as a whole,
128 because of the diversity of plant species and associations,
241 as well as their rapidly changing nature, it was decided to
311 conduct an exhaustive random sampling survey of the bush
137 allotments as described in Chapter I and Appendix A.
A 1
Consequently, the quantitative data presented are based on the survey of 101 or 1.8 percent of the approximately 5,652 bush allotments on Tongatapu. The sampled allotments had a combined area of 806 acres (326 hectares), 1.8 percent of the 45,214 acres (18,298 hectares) of bush allotments on Tongatapu. From the total of 101 sample bush
128 allotments, 29 allotments were mapped to give the reader a
241 feeling for the diversity of agricultural landscapes
311 (Table 28 and Figures 14-42). In an effort to subjectively
137 evaluate distributional patterns of vegetation types or
[126] other related agricultural phenomena, the presence or
128 absence of each item in the survey was plotted on maps of Tongatapu. An example of these maps is shown in Figure 43.

Extent of Cultivation

311 In the sample of 101 bush allotments, approximately
241 275 acres (111 hectares) or 34 percent of the total area was cultivated. This amounted to an average cultivated area of 2.7 acres (1.1 hectares) per allotment. However, of the

A [See Category 125, pp. 10-15, 350-358--Analyst.]

[TEXT CONTINUED ON PAGE 239]

92: Kaeppler E-4 (1964-1967) 1971
OU9 Tonga OU9

as Cook says, but perhaps his sister's son or someone else of higher *kāinga* rank. Anderson says that it was for a chief who had died at Vava'u some time before (Beaglehole 1967: 911). This is quite likely, as Vava'u was the home of Sinaitakala, i.e., the Tu'i Tonga's father's sister (mother of Latu) and individuals of this line were of higher *kāinga* rank than the Tu'i Tonga. Cook tells us that to the mourning ceremony the king wore 'an old ragged mat that might have served his great grand Father on some such like occasion: his Servants or those who attended him were all dressed in the same manner, excepting none of them having quite so ragged a Mat round them as their master' (Beaglehole 1967: 140).

This demonstrates once again that even the Tu'i Tonga was outranked within his *kāinga*. The same practice exists today for *liongi* of the high chiefs. For example, at the funeral of Queen Sālote in 1965 it was an honour to wear the most ragged mats, for it demonstrated visually that one was related to the queen (plate 1c). Queen Sālote's mother came from the Tu'i Tonga line making that line *liongi* to the queen—and thus the wearers of the most ragged of mats and the presenters of the most valued of ceremonial gifts, i.e., fine mats.

* * * * *

In this rank-oriented society, material culture held an important place. A few types of material culture will be discussed here to illustrate the usefulness of descriptions and collections from Cook's voyages for research on the interrelationships of social organisation and material culture. It was historical accident that the chiefs met on the second voyage were lower than the chiefs met on the third voyage, and also that some of the collections of artefacts from the two voyages can be separated.[8] These accidents make it possible to relate existing specimens not only to the class structure, but also to levels of chiefs, through written accounts from Cook's voyages and also through traditions still existing in Tonga.

The first type of material culture to be dealt with will be mats, which are the most necessary part of the *koloa* or gifts for any ceremony—be it a societal one or one within the family (family ceremonies having the same attributes as societal ones, only on a smaller scale). Mats have an intricate ranking system of their own, being classified by material and manner of fabrication. All the types of mats known today through fieldwork do not exist in eighteenth century collections. This may be for any one of a number of reasons. They may not have been collected; they may have been collected but then traded to other Polynesians; they may not have been in vogue at that time; they may not have been identified by their collectors as Tongan; or they may simply not have been preserved.

In his second voyage account Cook tells us 'they also make various sorts of Matts of a very fine texture which serve them both for Cloathing and beding. Their Dress is a piece of Cloth or Matting wraped round their Middle reaching from the breast down below the knee, they seldom wear anything over their Shoulders or upon their heads. The dress of the Men and Women are the same' (Beaglehole 1961: 266–7). By the third voyage, however, Cook realises that dress is a visual symbol of rank and adds that 'large pieces of Cloth and fine Matting are only wore by the superior people, the inferior sort put up with small pieces . . . or the Maro, which is a narrow piece of cloth or matting like a Sash' (Beaglehole 1967: 168). Cook finds also that 'they have mats made on purpose to sleep upon' (1967:

A. [See End Plate 1, following p. 220--Analyst]

92: Kaeppler E-4 (1964-1967) 1971
OU9 Tonga OU9

second voyage Journal. 'They have ... a curious apron, made of the out side fibres of the Cocoanut shell and composed of a number of small pieces sewed together in such a manner as to form stars, half Moons, little squars, etc., and studed with beads of shells and covered with red feathers' (Beaglehole 1961: 272). The Pitt Rivers example (plate 2c, 66 cm. × 66 cm.) is made of star-shaped elements, each having a central section and 10 or 11 points. This item was described by George Forster: 'we likewise purchased of them an apron, consisting of many wheels or stars of plaited coco-nut fibres, about three or four inches in diameter, cohering together by the projecting points, and ornamented with small red feathers and beads cut out of shells' (1777: 1, 454). One element is decorated with a pig tooth and the thirty-five elements are attached to a waistband that is unravelled at one end. An examination of Forster's account tells us why.

> We accidentally procured a quantity of these feathers at Amsterdam, one of the Friendly Isles, where they fastened them on pieces of their stuffs. These being carried to O-Taheitee, and shared out in little pieces, procured us a great number of hogs; for a bit of two inches square, covered with feathers, would at any time, be eagerly purchased with a hog (1778: 207); when we came the second time in 1774, to O-Taheitee after we had been to Tonga Tabu, where the natives make various ornaments of red feathers, we procured for them not only numbers of hogs, the most valuable article of trade, but likewise mourning dresses, which the natives refused to part with before, when Mr Banks was there, and during our first stay in their happy isle. The rage after these trifling ornaments was so great, that Potatoa a chief, whose magnanimity and noble way of thinking, we never questioned before, wanted even to prostitute his own wife, for a parcel of these baubles (1778: 367).

These aprons are known in Tongan traditions as *sisi fale*, and were worn only by high chiefs. Parts of at least twenty specimens of *sisi fale* have so far been recorded in museum collections. The usual elements are stars, rectangles, lozenges, crescents, and ovals—the elements and their combinations being quite distinctive. An interesting example of secondary use of a Tongan *sisi fale* by Tahitians is that two elements were used to decorate one of their human images which is now in the British Museum (TAH. 63). These two elements—now mostly denuded of their red feathers—are used for a head covering and a loincloth. It is possible that the element that forms the loincloth of the image is part of the *sisi fale* now in the Pitt Rivers Museum and perhaps traded to the Tahitians by Forster. Unfortunately, the British Museum specimen does not have any accession or collection information. It is interesting to speculate that perhaps Cook collected it himself on his third voyage. The half of the *sisi fale* in the Pitt Rivers Museum is probably what was left after Forster shared out two inch squares to the Tahitians, perhaps for the very Tahitian mourning dress in the Pitt Rivers Museum.

Two parts of another *sisi fale* from Cook's voyages exist in Vienna and Florence. Both of these seem to have come from the sale of the Leverian Museum in London in 1806, and probably originally came from Cook's third voyage. Another *sisi fale* that can quite confidently be identified is in the Musée de l'Homme, Paris. Unfortunately, again there is no collection or accession information, but I suspect that it is the one depicted in Labillardière (1802: 32), and thus collected on d'Entrecasteaux's voyage in 1793. Only the Pitt Rivers *sisi fale*, however, can be traced to Cook's second voyage—probably for several reasons: the chiefs interacted with during the second voyage were not the highest ones; Cook was not present during

[See End Plate 2, following p. 220--Analyst]

96: Lister N-5 (1889-1890) 1891
OU9 Tonga OU9

35. *Notes on the* Geology *of the* Tonga Islands.

By J. J. Lister, Esq., M.A. (Read June 24, 1891.)

[Communicated by J. E. Marr, Esq., M.A., F.R.S., Sec. G.S.]

[Plate XXIII.]

Contents.

	Page
I. Introduction	590
II. Topography of the Group	590
III. Geological Characters of the Group.	
(*a*) The Volcanic Islands	591
(*b*) Islands formed of Sedimentary Volcanic Material	595
(*c*) Islands formed entirely of Limestone	606
IV. Conclusion	616

I. Introduction.

Very little of a detailed character has, so far as I am aware, been published on the geology of the Tonga Islands.

Prof. Dana makes a brief mention of some of the islands in 'Coral and Coral Islands' *; and in the edition of 'Coral Reefs' published in 1874 Darwin gave a summary of what was known of the group †.

I spent several months in Tonga in 1889 and 1890, and had opportunities of visiting some of the islands in H.M.S. 'Egeria,' which was engaged, for part of the time, in making a survey. Such observations as I made on the geology of the group are embodied in the following notes.

I am indebted to Mr. Alfred Harker, M.A., F.G.S., who has examined the volcanic rocks which I obtained ‡, and also to Dr. John Murray, who has looked over sections of the calcareous rocks of Eua.

II. Topography of the Group.

The Tonga or Friendly Islands are situated in the Pacific Ocean between 18° and 22° 30′ lat. S., and on either side of the 175th degree long. W. Tongatabu lies a little over 1000 miles to the N.N.E. of Auckland in New Zealand. The large islands of Fiji are about 400 miles to the W.N.W., and those of Samoa about 300 miles to the N.N.E.

The greater number of islands fall into three main groups. The northernmost is Vavau, which consists of one moderately large island (about 13 miles in its longest diameter), giving its name to

* 2nd ed., pp. 288 & 289.

† P. 212 and elsewhere, 3rd ed. (1889).

‡ Mr. Harker has published notes on these specimens in the Geol. Mag. for June, 1891.

96: Lister N-5 (1889-1890) 1891
OU9 Tonga OU9

133 their descent to the sea. [Vavau Group] Opposite it, on the right of the passage is the island of Falevai (called "Kopa" in the Admiralty chart), which consists in part of a two-storied mass, in part of a one-storied tongue of land which extends out towards Mo'unga Lafa, while a terrace at the same level interrupts the slope on the side of the higher part of the island. Small islands are dotted over the sheltered expanse of water, two of which, A'a (called "Koto" in the chart) and Langito'o, present features of interest which will be alluded to below. As we advance, the hill Talau comes into view, exactly repeating the shape of Mo'unga Lafa, in the level outline of the summit and the two lines of terraces on its sides.

[126] The rough aneroid measurements that I obtained give about 140 feet as the upper limit of the first "story," 260 to 350 feet as that of the second, and 420 and 520 for the summits of Talau and Mo'unga Lafa, the two highest points of land in this part of the group. Although these numbers show that the levels of the terraces at different points do not agree accurately, the conclusion was strongly impressed upon me on the spot, that the terraces and islands at each level do in fact correspond, that is, that at successive stages in the elevation of the group, the summit of each "story" has stood at sea-level. The differences in their level may be in part accounted for by the unequal action of the elevatory forces at different points of the area acted on. Thus, on the hills Talau and Mo'unga Lafa, which are between three and four miles apart, while the summit of the lowest story is at about the same level in each (140–150 feet), the two upper ones stand at about 270 and 420 feet in Talau as against 360 and 520 feet in Mo'unga Lafa. From this it appears that the second elevation was of greater extent in the neighbourhood of Mo'unga Lafa than to the eastward near Talau.

One remarkable feature in the contour of the land is the fact that in some cases the summits of the islands, though level in profile, are excavated by well-marked depressions.

The most perfect example of this structure is presented by the little island of A'a (the Koto of the chart) above mentioned. The island is of an oval shape, being about three quarters of a mile long and half a mile broad. It rises out of deep water, and is not surrounded by a reef. In the chart a sounding of over 40 fathoms is shown close to the southern shore, and except for a small shallow area at the eastern end the other soundings in the neighbourhood indicate nearly as great or greater depths.

The sides slope steeply up to a height of from 85 to 95 feet (an elevation considerably less than that of the top of the first "story" in the surrounding islands), but the interior of the island is depressed 50 or 60 feet below the level of the margin, being occupied by a flat which stands at a height of some 36 feet above the sea. The margin is of a nearly uniform height and forms a complete [134] unbroken ring. On its summit rough masses of limestone rock stand up, but the flat interior is formed of brown earth. It seems clear that when the rock forming the edge of the island stood at sea-level a small lagoon some 10 fathoms deep occupied the centre.

/52 cont./

291 be uncomfortable. They adhere to this not so much because of the law, but because they realize that the shirt means civilization, an approximation of the respected world of the whites, and that the naked torso /53/ is something "barbaric." (129)

[126] [123] 129. The author had difficulty, in photographing Tongans, to persuade them to remove their shirts, for they did not want to look "like savages"; when they go fishing, many Tongans enter the water fully clothed, that is, with shirt and yala.

[186] [565] The yala owes its firmly entrenched position, however, not only to a certain national pride, but also to the fact that it has become an article of clothing of the commoners who were once underprivileged.

291 177 [752] The Tongans usually go barefoot, as in olden times. Some natives wear shoes after a foot injury, to let the wound heal, and today there are also some young Tongans on the small islands as well as in the seaports who wear white tennis shoes, only because they find it "nice," because it looks "European," whereas some employees in the government and in the large department stores like to wear leather sandals. Most Tongans also still go bareheaded. Only now and then they wear old felt hats, sun helmets and hats plaited of halved coconut palm leaves; (130)

130. For example, simple-shaped hats that college students like to make, and others that imitate certain European models (tata faka-polisi=police caps, helemiti=sun helmets).

sometimes they also wrap a cloth around their heads as a protection against the sun, just as people formerly protected themselves against the sun's rays, for example, on the plantations and on the sea, with various kinds of head coverings. (131)

131. Cf. J. Cook, Beschreibung...loc. cit. VI. p. 280; J. Martin, loc. cit. I. p. 167; J. Dumont d'Urville, Voyage pittoresque... loc. cit. II. p. 78.

/168 cont./

Only a few Tongans were interested in the cats which Europeans imported. The following survey may give an idea of the numerical proportion of the individual domestic animals. The data were obtained in April 1952 in 'Uiha/'Uiha, a typical village of the more remote islands, and in May 1952 in Fungamisi/Vava'u, a village adjacent to the rather large seaport of Neiafu:

/169/'UIHA:

Domestic animals (including young animals)	In possession of all 99 households checked	per household
Pigs	917	0(444) --35
Chickens	1095	0(445) --54
Horses	54	0 -- 3 (446)
Cattle	1	0 -- 1
Goats	31	0 -- 5
Ducks	33	0 --10

FUNGAMISI:

Domestic animals (including young animals)	In possession of all 42 households checked	per household
Pigs	109	0(447) --20
Chickens	547	0(448) --50
Horses	38	0 -- 4 (449)
Cattle	14	0 -- 4
Goats	6	0 -- 3
Ducks	21	0 --10

444. Of the 99 households only three have no pigs.

445. Of the 99 households 13 have no chickens.

446. Only one household has three horses.

447. Nineteen households have no pigs.

448. Nine households have no chickens.

449. Only one household has four horses.

101: Clark K-4,5 (1974) 1978 OU9 Tonga OU9

125
146 children showed symptoms of night blindness. Bitot spots, xerosis, xerophthalmia and keratomalacia were also noted.

4. Hair changes. Principally, dyspigmentation of hair color from the characteristic black to a reddish brown was noted.
[302] However, the possible use of domestic or imported dye (frequently perceived as a status item) lessened the reliability of these observations. None the less, microscopic examination of hair samples verified that changes in pigmentation were greater within the urban sample.

5. Muscle wasting. This condition was noted in only one case in the total sample. Given the high caloric and starch diet of the Tongan, it is reasonable that such cases are rare.

125 6. Anthropometric indicators. Each child's height, weight, left arm circumference and tricep skinfold measurements were recorded. Height was taken using a vinyl tape, in conjunction with a back and head rest. The circumference measurement was acquired following the standard procedure of measuring halfway between the acromial process of the scapula and the point of the elbow. Weight was taken using a bathroom scale, adjusting the reading to zero prior to each weighing. Skinfold measures were taken three times and the average was recorded.

125
126 7. Hair. Hair specimens were also obtained from each preschool child examined. Care was taken to obtain specimens having the hair root intact. The procedure followed that outlined by Bradfield (1972), and varied only in the number extracted from each

101: Clark K-4,5 (1974) 1978 OU9 Tonga OU9

125 child.[1] Samples were stored in numbered postage envelopes for
126 transit from Tonga, the numbers corresponding with those of the appropriate survey forms.

128 Examination and analysis of collected specimens also fol-
125 lowed the procedure outlined by Bradfield. Samples were first separated by growth phase (i.e., anagen [growing], telogen [resting]) followed by a classification of morphological changes in each phase. Bulb diameter was determined, using a standard dissecting microscope equipped with a micrometer eyepiece. Two measurements for each sample were taken and the average determined. The percent of atrophy (an atrophied bulb is shrunken, having a shriveled appearance and a considerable decrease in bulb diameter) was also determined.

Alterations in bulb, sheath and hair shaft were also noted and classified, although growth phase, root bulb diameter and percent of atrophy were of prime importance to the research. Results of the above were then compared with the figures in Table 26, which suggests standards for preschool children. The standards formulated by Bradfield were developed from studies of children with Asian and Negroid hair types.

---

[1] Because root presence was determined at the time of collection, fewer hairs were necessary than that suggested by Bradfield (1971, p. 70).

[See Category 128, p. 146--Analyst.]

102: Brierly T-3 (1850) 1852
OU9 Tong OU9
Tongat pu

what at first we took to be a canoe, about 5 feet in length and 18 inches deep; this was the "lali," or great drum of the town, which was beaten to call the people together on important occasions. The old chief, seeing our curiosity excited about it, took up the sticks, two pieces of wood about 18 inches long, and began to beat it most vigorously, smiling all the time and nodding his head as though he were giving us quite a musical treat, becoming so energetic that we were afraid he would bring the whole place to see what the matter was. It was struck on the edge, one side being much worn away from continual beating. Although the sound, when standing near the drum, did not appear to be very loud, it could be heard distinctly for a considerable distance.

From the Governor's we went to the hill above the anchorage, where the Meander's band was coming to play in the afternoon. On the road we were passed by crowds of natives hurrying to the spot. As the band had not yet arrived we went to look at the inside of the church, which is a very perfect specimen of the native style of building; the floor was about 130 feet long by 44 feet wide; the roof being about 35 feet high in the middle, oval shaped and very deep. There were no windows, the light coming in from the openings in the sides, which served as entrances. The roof was placed upon a frame of very large spars, secured where they crossed each other by strong lashings, and supported by posts below. The whole floor was matted and without division of any kind, excepting a low rail before the pulpit. This church was built for the missionaries by King George in a very short time, upwards of a thousand people being employed in its erection.

While I was making a sketch from the hill, a young man came to me, and said he had a fine canoe to sell, and wished very much that I would go home with him to look at it, saying, in English, "Mine is a very good canoe; supposing you want it, I make the sail to-night;" and then, admiringly, as though he were looking at it, "O it is a beautiful canoe." Being rather more anxious about the sketch than his canoe, I did not pay much attention to what he was saying; and he continued to stand at my elbow, apparently watching every touch of the pencil very intently. Imagining that he was interested in the proceeding, I stopped, and held the book up for him to look at; but the canoe was all he was thinking about, and eagerly seizing the opportunity to direct my attention to his hut, among the cocoa-nut trees just below, he came again to the point, saying, persuasively, "Do come to the canoe;" and looking much disappointed when I said I could not then spare the time, he continued, in a resigned tone, "Well, you have the canoe; I make sail to-night," mentioning the sum of five dollars as the price of it. This latter idea put a stop to any further negotiation on the matter as far as I was con-

102: Brierly T-3 (1850) 1852
OU9 Tonga OU9
Tongatapu

compliment explained to him, he immediately thanked Captain Keppel and his officers. After dinner chairs were taken on deck and the party adjourned to the poop, where the band played a variety of airs, opera pieces, &c., with which his Majesty appeared much pleased, saying at the end of every piece, "Mālo" (very good), adding slowly with a deep bass voice, "Māléeah" (very sweet). Coffee being served on deck, he laughed at our taking such a variety of things at one meal, but drank two cups which he half filled with sugar. He then made a short speech addressed to Captain Keppel to the purpose "That he was proud a vessel so large, and belonging to so great a nation, should come to see him who was so weak and his people so few. That it made him feel glad to see Captain Keppel and so many officers;" and then, alluding to Tahiti, said, "that he knew of the confusion caused by the French; that he wished not their visits and friendship; that theirs was (unga mátē) a deadly shade, observing, that he did not say this because he was sitting beside one of the Queen of England's great chiefs, and on board her ship, but that, if his departed ancestors could come to speak there that day, they would all bear witness to his truth, and that if every member of his body had a voice they would all say, thank you." He spoke fluently, with pleasing intonation and dignified manner. We were told that the Meander was the largest vessel he had ever seen, and he was very particular in his inquiries as to the number of men and guns she carried, and expressed some curiosity to know where and how the men all slept. To explain this, a hammock was taken out of the nettings and slung under the spanker-boom. While this was being done, the men forward happened to be hoisting a bullock out of the boom-boats to be lowered on to the main deck for killing. This caught his attention and seemed to interest him more than anything that had been shown him, and forgetting for a moment his usually dignified manner, he picked up his tappa gown, and ran forward to look at it.

About seven o'clock he took his departure under a royal salute; and at eight, a number of rockets were sent up, all the natives coming down to the beach to look at them, calling out to each other as they watched them ascending, "See! see! how they walk in the sky!"

June 22nd.—Hearing that the king was to give another great kava party to-day, I went with several others to see it. There was, however, nothing new in the ceremony, but on this occasion I succeeded in getting a sketch of his Majesty, who soon perceived what I was about, and when it was finished, desired to see it. The chiefs also were all curious to see it, passing it from one to another, saying as they looked at it, "It *is* the king." When I asked through one of the missionaries for the royal autograph, the

102: Brierly T-3 (1850) 1852
OU9 Tonga OU9
Tongatapu

king said he did not like to write before so many white men, who were all so much wiser, and who knew how to write so much better than himself, but that he would write it for me when alone. After the Assembly broke up we went to the palace, where we had called the day before, and found the queen prepared to receive us. Her Majesty was seated on mats in the centre, or chief place of the apartment; the king sitting on her right, and three principal chiefs on her left hand, the rest of the chiefs all sitting round in a great semicircle on the lawn before the palace, as they had done at the kava party. The queen is about thirty, very stout, with a round good-natured face, large and full eyes, with a very pleasing expression, small mouth and very white regular teeth. She wore her hair short, and dressed with a white powder rubbed on wet, and then combed so as to stand up like the front of a barrister's wig—a mode of hair-dressing by no means unbecoming in the Tongaese women. She received us without rising, smiling and holding out her hand as we were presented. There were present on this occasion a number of Feejee chiefs, who had just arrived with one of their principal men. They had their faces and necks blackened, and wore enormous bushes of hair, dyed different colours and curiously arranged, very much resembling in this respect the natives of the Louisiade. They were smaller and much darker in colour than the Tongaese, with a wild restlessness of expression, quite different from the placid manner of the Friendly Islanders. Upon seeing me the king remembered my wish to have his autograph, and taking my sketching tablet and pencil with him into the royal bed-chamber—a small room divided by a mat-partition from the one in which we sat—he wrote his name, and brought them out to me again. Wishing to have that of the queen, whom I had heard could write, I ventured to ask for hers also. She appeared pleased with the idea, and smiling, at once got up from her mats, and going into the bedroom, as the king had done, returned again immediately, having placed her own signature, "Charlotte Lube," or Charlotte the Dove, below that of her royal master. The king signs "George Tubou," or George the King.

I had tried the day before, without success, to procure one of the musical instruments mentioned by Cook, a kind of flute played with the nose, called a "fung fung," and a native girl had undertaken to find or make one for me to be ready when we came on shore to-day. Hearing that she had kept her promise, and moreover was quite prepared to show me the mode of playing it, I slipped away from the Royal party, and started off with one of the missionaries to go up to his house, that I might see the performance, but as we met her upon the road, bringing three or four of the flutes with her, we turned and walked back. When, how-

104: Hornell E,N-5 (1925) 1927 OU9 Tonga OU9

String Figures From Fiji and Western Polynesia

By James Hornell

INTRODUCTION

SCOPE AND PURPOSE

101 122 The string figures described in this paper were collected in 1925 during an expedition to central and western Polynesia and to Fiji, carried out under the auspices and with the financial assistance of the Percy Sladen 122 Trust, whose generosity has made possible many extensive researches. To the Trustees and to the friends whose counsel and assistance in preparing for the expedition were of inestimable value, I tender grateful thanks. My obligations to Dr. A. C. Haddon and to Professor C. G. Seligman in particular are specially heavy. Neither must I omit to express my indebtedness to Ratu Pope e Seniloli, grandson of King Thakombau of Fiji, the present Vunivalu and Chieftain of Mbau; also to the Reverend John Hevea of Tongatabu; without their assistance my collection of Fijian and Tongan string figures would have been greatly reduced in number and in value.

101 The island groups visited included the Marquesas, the Society Islands, 121 Samoa, Tonga, and Fiji. Other lines of inquiry monopolized attention 126 during the time spent in the Marquesas and Society islands, but a few important figures were picked up in Tahiti. Another consideration against 121 devoting time to this subject in the Marquesas and Society islands was 126 the knowledge that Willowdean C. Handy had already made a collection 114 of these games during a long stay in this locality and would shortly publish them (10).[1] I now regret this calculated neglect, for I find that one only of the 5 figures I obtained in Tahiti is represented in Handy's collection of 25 from the Society Islands, and even in this, the method of working is so different as to entitle it to be considered a distinct game. This demonstrates alike the wonderful wealth of these Oceanic islands in this form of human ingenuity and the practical difficulty of any one individual being able to make a complete collection of the games now or recently known to the people of any particular island group.

[1] The numbers in parentheses refer to the bibliography on page 88.

[p. 3]

104: Hornell E,N-5 (1925) 1927 OU9 Tonga OU9

524 171 It is also noteworthy that the *imbi* is the most widely spread of any string game, either single or serial, in Oceania. In Samoa and in the Gilbert, Tokelau, and Ellice islands, where it has not been recorded, I feel sure that it will eventually be found.

The relationships of the Tongan figures are wholly Polynesian if Fiji be excluded. Only one form is common to Tonga and the New Caledonia area, whereas 2 of the total 10 are found in New Zealand and 3 in the Society and Marquesas islands. Of these 3, one appears also in Samoa and in the Ellice and Tokelau islands.

The Samoan figures are not sufficiently numerous to permit useful or valid conclusions to be drawn, except that 2 of them betoken close relationship with the islands to the westward.

121 As pointed out by Handy (10a) a study of string figures has thrown a strong light on the relationships of primitive peoples, but much more information from many island groups is necessary before the full value of the geographical study of string games can be utilized adequately in the solution of the ethnological problems of Melanesia and Polynesia. The present collection has perhaps its chief value in breaking new ground in certain island groups. What has been done in Samoa and in Tonga is not a tithe of what may be accomplished there if an investigator with tact and a knowledge of the language devotes adequate time to the study. Fiji is so prolific a field that I am satisfied that numerous games remain unrecorded. Immediate attention to this subject is, however, necessary, for the people are rapidly forgetting the games and in a few years many will have become irretrievably lost. I would direct special attention to the collection of the chants associated with many of the games. Wherever possible these have been recorded in this collection.

524 178 533 171 126

TERMINOLOGY

128 In the description of the movements required to evolve the various figures, I have adopted the technical terms devised by Rivers and Haddon (15), and used also by Handy (10), who describes the terminology in the following convenient form:

> The back of the hand and fingers is referred to as the dorsal side; the palm, as the palmar side; so that a string or a loop is said to lie on the dorsal or the palmar side of the hand or a finger, is picked up on the dorsal or the palmar side of a digit. The little finger side of the hand is called the ulnar side; the thumb side, the radial side; so that strings are said to be ulnar or radial according as they lie on the side of a finger towards the little finger or towards the thumb. Similarly, the direction of the rotation of a hand or a finger is designated as in the ulnar or in the radial direction, according as it describes an arc or a circle starting towards the little finger side of the hand or towards the thumb side.